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December, 1943

EDISON
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BULLETIN

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PUBLISHED MONTHLY BY EDISON ELECTRIC INSTITUTE

THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

September, 1942 and 1943

SOURCE AND DISPOSAL OF ENERGY—MONTH OF SEPTEMBER

	1943	1942	%
GENERATION* (Net)			
By Fuel Burning Plants	13,475,456,000	10,906,600,000	+23.6
By Water Power Plants	5,364,430,000	5,218,700,000	+ 2.8
Total Generation	**18,839,886,000**	**16,125,300,000**	**+16.8**
Add—Net Imports Over International Boundaries	111,970,000	101,700,000	+10.1
Less—Company Use	228,498,000	183,800,000	+24.3
Less—Energy Used by Producer	746,383,000	300,000,000	+148.8
Net Energy for Distribution	**17,976,975,000**	**15,743,200,000**	**+14.2**
Losses and Unaccounted For	1,854,658,000	2,030,923,000	− 8.7
Sales to Ultimate Customers	**16,122,317,000**	**13,712,277,000**	**+17.6**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of September 30th			
Residential or Domestic	26,885,477**	26,565,658	+ 1.2
Rural (Distinct Rural Rates)	1,089,061	1,101,980	.....
Commercial or Industrial:			
Small Light and Power	4,163,623	4,274,974	− 2.6
Large Light and Power	148,419	152,509	
Other Customers	118,629	123,314	.....
Total Ultimate Customers	**32,405,209**	**32,218,435**	**+ 0.6**
KILOWATTHOUR SALES—During Month of September			
Residential or Domestic	2,325,926,000**	2,156,466,000	+ 7.9
Rural (Distinct Rural Rates)	327,823,000	354,717,000	− 7.6
Commercial or Industrial:			
Small Light and Power	2,505,491,000	2,321,721,000	+ 7.9
Large Light and Power	9,339,388,000	7,723,858,000	+20.9
Street and Highway Lighting	168,168,000	156,562,000	+ 7.4
Other Public Authorities	825,789,000	384,100,000	+115.0
Railways and Railroads:			
Street and Interurban Railways	345,721,000	328,581,000	+ 5.2
Electrified Steam Railroads	206,005,000	193,935,000	+ 6.2
Interdepartmental	78,006,000	92,337,000	−15.5
Total to Ultimate Customers	**16,122,317,000**	**13,712,277,000**	**+17 6**
Revenue from Ultimate Customers	**$261,045,290****	**$240,252,700**	**+ 8.7**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For the 12 Months Ended September 30th**			
Kilowatthours per Customer	1,058	1,015	+ 4.2
Average Annual Bill	$38.62	$37.35	+ 3.4
Revenue per Kilowatthour	3.65¢	3.68¢	− 0.8

(*) By courtesy of the Federal Power Commission.
(**) Above data reflects results of bi-monthly billings on part of certain large companies.

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 11 DECEMBER, 1943 No. 12

Statement Before U. S. Senate Finance Committee on Revenue Act of 1943

By C. W. Kellogg

President, Edison Electric Institute

From a presentation made at Washington, Dec. 2

FOR your information in considering my statement, I am handing you six tables and two charts which have been prepared by the Institute. The tables show the size and makeup of utility taxes during the base period and in recent years; the growth in investment and the decrease in return thereon; and the taxes expected to result from the application of the rates of taxation contained in HR 3687. The charts bring out the salient points in the tables. I am also filing a copy of a report prepared by the eminent New York economist, Lionel D. Edie, covering a study he has made of 20 selected utility companies.

Changes in corporate taxes approved by the House of Representatives in HR 3687 provide for raising the excess profits tax rate from 90 to 95 per cent and also for reducing the allowance on the invested capital by one percentage point on amounts of invested capital in excess of $5,000,000. As the basis for recommending a general increase in corporation taxes, Secretary Morgenthau is reported as having said to the Ways and Means Committee of the House on October 4, 1943:

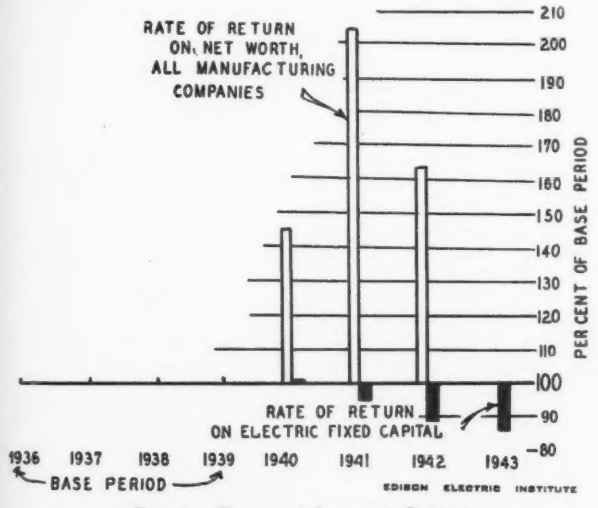
"Despite heavy increases in taxes, net corporation income, after taxes, has risen greatly since 1939."

I have quoted Secretary Morgenthau's statement not to question its accuracy, but to point out that the condition he reports with respect to corporations in general is not true with respect to electric utilities.

Experience with the operation of wartime taxes has demonstrated that the regulated electric utility companies have been much harder hit than other types of business. Taking the 1936-1939 "base period" as 100, the net income of the regulated electric utility companies in 1942 was *88*, or 12 per cent below the base period and, if the change in excess profits tax rates in HR 3687 is made effective, it would drop to *86* for the year 1943, or 14 per cent decrease. On the other hand, the index number for the return on net worth of all manufacturing companies in 1942 stood at 164, or an increase of 64 per cent over the base period.

On the average, the electric utilities require seven times as much plant investment per dollar of gross revenue as do the industrials. They are, therefore, particularly vulnerable to rate of return on investment.

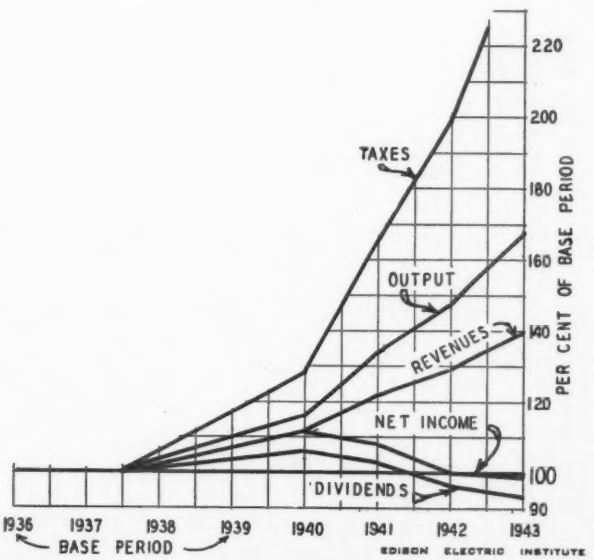
The utilities are a regulated industry and not able, therefore, to increase selling prices as can the average industrial. On the contrary, the unit price at which



Earning Power of Invested Capital

Return on net worth is th eratio of net income, after taxes, to the book value of outstanding stocks plus surplus account, averaged for the year.

Return on utility fixed capital is the ratio of operating income, after taxes, to the book value of plant and equipment, averaged for the year.



Changes in finances of electric utility companies since base period.

TABLE I—ESTIMATED INCOME STATEMENT 1943

Electric Light & Power Companies

(Millions of dollars)

	1941	1942	Per cent change	1943*	% Change
Operating Revenues	2,467	2,611	+ 6	2,816	+ 8
Operating Expenses	947	1,011	+ 7	1,134	+ 12
Depreciation	279	294	+ 5	309	+ 5
Taxes	520	630	+ 21	710	+ 13
Total Deductions	1,746	1,935	+ 11	2,153	+ 11
Operating Income–Electric	721	676	- 6	663	- 2
Other Depts	55	59	+ 7	66	+ 12
Non-operating Income	73	72	- 1	70	- 3
Gross Corporate Income	849	807	- 5	799	- 1
Interest, amortization, etc	312	310	- 1	304	- 2
Net Income	537	497	- 7	495	

*Estimated on basis of actual results of first 9 months of 1943 with Federal tax rates of House Bill 3687 applied.

Source: 1941-42 as shown in Edison Electric Institute Statistical Bulletin #10 Table 33 p. 39 (Revised)

TABLE II—BREAK-DOWN OF UTILITY TAXES[1]

(Millions of dollars)

	1940	1941	1942	Increase	1943[2]	Increase over 1942
Federal taxes:						
Income taxes	$129	$179	$210	$31	215	5
Excess-profits	6	47	118	71	191	73
3% excise tax	44	49	50	1	52	2
All other Federal	11	19	17	dec 2	17	-
Total, Federal	190	294	395	101	475	80
State and local taxes	214	226	235	9	235	-
Total taxes	404	520	630	110	710	80

[1] Preliminary figures.

[2] Estimate, based on actual results for first 9 months of 1942 and application of Federal tax rates contained in H R 3687.

TABLE III—GROWTH OF ELECTRIC-UTILITY TAX BURDEN—PER CENT OF GROSS REVENUE

Year	Spent for operating maintenance and depreciation	Spent for taxes	Balance available for return on investment and extension	Total
1930	46	10	44	100
1935	48	14	38	100
1940	49	18	33	100
1941	50	20	30	100
1942	50	24	26	100
1943[1]	51	25	24	100

[1] Estimate, based on actual results of first 9 months.

TABLE IV—EFFECT OF FEDERAL INCOME AND EXCESS-PROFITS TAXES UPON EARNINGS OF ELECTRIC LIGHT AND POWER COMPANIES[1] IN THE UNITED STATES

(Money amounts in millions of dollars)

Year	Net income before Federal income and excess-profits taxes	Federal income and excess-profits taxes: Income	Excess profits	Total	Per cent before taxes	Net income after all taxes and charges
1917[2]	122			6	5	116
1922[3]	240			10	4	230
1927	508	36		36	7	472
1932	542	36		36	7	506
1933	437	33		33	8	404
1934	435	44		44	10	391
1935	459	39		39	9	420
1936	512	52		52	10	460
1937	575	66		66	12	509
1938	548	63		63	12	485
1939	628	89		89	14	539
1940	692	129	6	135	20	557
1941	763	179	47	226	30	537
1942	825	210	118	328	40	497
1943[4]	901	215	191	406	45	495

[1] All privately owned utilities, including multiple-service companies which supply gas, water, fraction and other services in addition to electricity.

[2] Based upon United States Census of Central Stations for 1917, which represented 78 per cent of the electric light and power companies as now constituted.

[3] Based upon United States Census of Central Stations for 1922, which represented 87 per cent of the electric light and power companies as now constituted.

[4] Estimated on basis of first nine months and applying rates of Federal taxation as in H R 3687.

they have sold residential electricity is now 17½ per cent below the 1935-1939 average, while the cost of living is up 23 per cent and the index of wholesale prices is up 29 per cent since that time.

Under present conditions, and possibly under future conditions, unless this industry is husbanded taxwise the industry can only look to surplus for new junior money, unless it can attract outside capital made imperative through growing consumer demands. The two points of the magnet attracting such capital are: 1st, not alone the current dividend and resultant yield, but the trend of the amount disbursed; 2nd, the cushion in the form of surplus. Facts supporting these statements are brought out in detail in the study by Dr. Edie which I have filed with you for the record.

The public utility industry is keenly aware that all segments of the economy must contribute their share of the financial sacrifices required to implement the war effort. For that reason and that reason alone the industry has been hesitant to press its case for relief under the 1942 act although the record is clear. Our record of outstanding performance on the industrial front, with the security of this country and its institutions at stake, is one to which we point with pride. As soldiers in the ranks of industry we have done our fair share. However, the industry has borne far more than its fair share of business taxes. With the romance that goes with growth not entirely absent but certainly harnessed, we are compelled to seek stability of earnings to finance our required expansion along conservative lines. The present tax proposals written into the bill now before your committee compound the injury done by the 1942 act.

I believe the figures I have presented indicate that there should be no increase in existing rates of normal, surtax or excess profits taxes, nor any decrease in allowable rates of return on invested capital.

As a source for raising the additional taxes which would be obtained from the private utilities under the rates of taxation contained in HR 3687, attention is called to the fact that at the present time publicly and cooperatively owned electric utilities are paying no federal taxes. Yet such publicly and cooperatively owned utilities are called comparable to the private utilities in all respects. The suggestion that taxes on the private utilities be now increased serves to emphasize the unfairness to them and to their consumers that the publicly and cooperatively owned utilities are free of federal taxes. Any loss of revenue caused by exempting utilities from the increased rates provided in HR 3687 can be doubly offset by taxing governmentally owned utilities on the same basis as the private utilities now pay.

TABLE V—EARNING POWER OF INVESTED CAPITAL

Return on Net Worth of All Manufacturing Companies Compared With Return on Invested Capital of Electric Utilities

	All Manufacturing Companies (1)		Electric Utility Companies					
			Operating Income		Electric Fixed Capital		Return on Investment	
Year	Return on Net Worth	% of Base Period	Million $	% Base	Million $	% Base	%	% Base
1936	6.2%	103	712	98	12,000	100	5.9	98
1937	8.0	132	726	100	11,950	99	6.1	101
1938	3.1	51	707	98	12,025	100	5.9	98
1939	7.0	116	749	104	12,100	101	6.2	103
BASE PERIOD		100		100		100		100
1940	8.8	146	750	104	12,225	102	6.1	101
1941	12.4	205	721	100	12,475	104	5.8	96
1942	9.9	164	676	94	12,650	105	5.3	88
1943 (as per HR 3687)			663	92	12,825	107	5.2	86

Sources: Manufacturing Companies, from U S Treasury "Statistics of Income" for years 1936-1940 inclusive, as shown summarized by the National City Bank in its Bulletin on Economic Conditions, March, 1943, p 34. Years 1941 and 1942 as shown for 1198 companies by National City Bank in its April, 1943, Bulletin.

Electric Utility Companies: from Statistical Bulletins of the Edison Electric Institute; 1943 is a preliminary estimate.

TABLE VI—CHANGES SINCE BASE PERIOD IN FINANCES OF ELECTRIC UTILITY COMPANIES

	Electric Generation		Electric Revenues		Operating Income		Fixed Capital **		Electric Taxes		Electric Dividends	
Year	Total Billion Kwhrs	% Base Period	Total Million $	% Base Period	Total Million $	% Base Period	Total Million $	% Base Period	Total Million $	% Base Period	Total Million $	% Base Period
1936	102	95	1,911	94	712	98	12,000	100	281	89	407	94
1937	110	102	2,031	100	726	100	11,950	99	308	98	442	102
1938	104	97	2,018	100	707	98	12,025	100	323	102	426	99
1939	115	107	2,148	106	749	104	12,100	101	352	111	453	105
BASE PERIOD		100		100		100		100		100		100
1940	125	116	2,277	112	750	104	12,225	102	404	128	456	106
1941	144	134	2,467	122	721	100	12,475	104	520	165	446	103
1942	158	147	2,611	129	676	94	12,650	105	630	199	416	96
1943*	181	168	2,816	139	663	92	12,825	104	710	225	400	93

Note: *1943 figures are preliminary estimates on basis of first nine months and with rates of H R 3687 applied.

**Average for year

Conserve Critical Resources

By William A. Lyons
Chief of Fuel and Allocations Branch, OWU, WPB

Presented before Southeastern Electric Exchange, Henry Grady Hotel, Atlanta, Oct. 28

IT IS UNNECESSARY to tell this audience that *at the other end of the power line* connected with the lights in this room *is one of the best organized and smoothest-running basic industries in the country—probably the model of all American businesses in its preparedness for war.* I refer, of course, to the electric industry in general not excluding the Southeast utilities in particular.

The nation has from time to time had occasion to be concerned about how some of its other vital industries would be able to meet the tremendous demands of this unprecedented war. It is conscious of the fact that its electric generating facilities have been adequate from the very start of hostilities, and will continue for the duration to deliver what is needed.

I am not here today to talk to you about that phase of the electric industry's wartime job, which job has been well done. It is at the customer's end of the power line — where the push buttons and switches, motors and light bulbs are located—that the industry has been given a new war job. Those push buttons and switches are among the few remaining means by which the American public and industry can, without some kind of Government consent, consume coal and metals and utilize manpower and transportation facilities.

Most of these resources essential to your industry are, as you know, critical items widely in demand for war purposes as important as yours.

And yet, as we enter our third winter of war, the American people and American industry still are free to snap on lights and turn switches that, just as actually as steel making, for example, use the coal and metals and manpower so much in demand by all of the war industries.

Now let me emphasize that we all want to have a continuance of voluntary management of electricity consumption by your customers. There certainly is no desire in any informed quarter that I know of to ration electric energy by mandatory measures if the necessary results can be obtained through voluntary measures. The generation and distribution of electricity is, of course, one of our most essential industries. But at the same time there is no doubt whatever of the need to hold consumption of power to only the essential uses.

To borrow a term from the Controlled Materials Plan—which is the method of dividing up all available supplies of steel, copper and aluminum—there are numerous "claimant agencies" for the basic commodities you consume. And there simply is not enough to go around without strict conservation.

Take coal, for instance. On October 25th the Coal Committee of the United Nations Combined Production and Resources Board announced that war requirements will seriously tax the resources of all coal-producing areas open to the United Nations. Referring to our country the statement said:

"In 1943 consumption of U. S. bituminous coal will be just over 600 million tons. Production will be about 590 million tons. Ten million tons will have to be taken from the stockpile, already reduced from 91 million tons in December, 1942, to 74 million tons last August—a 52-days' supply at the July rate of consumption. Shutdowns last spring reduced expected 1943 output by nearly 25 million tons. Continued depletion of stocks may quite probably reduce reserves to a 40-days' supply by next January.

"Requirements of U. S. coal for 1944 are estimated to be 620 million tons, and if present trends continue production will fall far short of this amount.

"It must be borne in mind that total stockpile figures and even total production figures for United States mines cannot be regarded as indicating a workable position since the transportation capacity is of equally vital importance."

You and I know that facts comparable to these apply also to the other things required by your industry—notably transportation, manpower and critical metals. Overworked transportation and shortages of manpower need no elaboration from me at this time; the same applies to the tight situation in metals generally. However, a word about tungsten. There is no shortage of tungsten ore. There is a shortage of ingot capacity and fabricating equipment and facilities for drawing the fine wire used in light bulbs and radar equipment. These shortages have actually caused setbacks in production of urgently needed radar devices.

I am sure I won't need to dwell further on this matter of almost unlimited war demands and definitely limited resources to meet them. You understand the general situation as well as do we in the Government.

But I think you will want to hear the story of what has been done in meeting the problems of conserving the critical resources used for power, heating, cooking and other civilian activities.

Back in January of this year people within the War Production Board and the other agencies in Washington were giving a good deal of thought to what could be done to maintain a rising tempo of war production. It was felt that one of the limiting factors on war production might very well be fuel—coal, gas and oil. The field within which the WPB mandatory orders curtailing or stopping production of thousands of items from automobiles to zippers, without seriously affecting essential civilian activities, had reached the point of exhaustion. These are the L, M and P orders with which I am sure you are acquainted.

Gradually the conviction developed that new savings from then on would have to come from the general run of civilian uses. These general civilian uses are competing with war needs in the area of use where enforcement of mandatory orders might reach well nigh unmanageable proportions and result in mass regimentation. It was apparent that a great volume of savings could be obtained from cutting back on some of these things generally used by 130 million people.

At one point in these considerations the idea of a mandatory order that would put out lights under given circumstances was definitely entertained.

Extensive consideration was also given to the rationing of both anthracite and bituminous coal. These presented numerous difficulties, among them the many lines of demarcation to be made between uses, enforcement of the orders and the like. The decision was then made in favor of a voluntary program and against mandatory orders by the government agencies concerned, in some cases after consultation with the industries. You will recall that the Informal Electric Advisory Committee which met with Mr. Krug early in June was unanimously in favor of the voluntary program with specifications developed by the OWU in consultation with the industry. Under the voluntary approach the various industries undertake to see that the consumer does his own rationing.

At this stage of development, the general principles had sufficiently crystallized to permit setting up the organization to plan the program in detail and carry it out. Accordingly, on July 2 Donald M. Nelson, Chairman of the War Production Board, addressed a memorandum to the Board suggesting the proposed program for their consideration and outlining the main features. He said the purpose was "to reduce to the minimum non-essential or wasteful activities which it is not feasible to eliminate by compulsory limitation orders," and stated, "This program is a necessary measure in connection with our current efforts to increase war production."

Mr. Nelson went on to say, "The program should concentrate on the important opportunities for savings in critical resources—manpower, material, equipment and fuel—which are present in domestic and commercial use of coal, petroleum products, electricity, gas, water, communications and transportation. A substantial further reduction of use could be accomplished without serious hardships to consumers. This would release critical resources in amounts sufficient to provide a major stimulus to war production."

The WPB chairman cited the success of the campaigns of the oil and gas companies to conserve fuel oil last winter; the campaign of your own electric utilities here in the Southeast to reduce load during your drought in November and December of 1941. He referred also to the various national salvage campaigns which brought such good results on a voluntary basis.

Explaining that war production was approaching its peak, he said a vigorous coordinated program was needed, and estimated that as much as a 10 per cent reduction could be effected for the nation as a whole in the current domestic and commercial use of the services of the seven industries named. He then expressed this in terms of actual products, estimating that the 10 per cent reduction in coal for heating would bring an annual saving in excess of 20 million tons; that a similar reduction in use of electricity would save more than 4 million tons of coal and over 75 million lamp bulbs; that a corresponding reduction in the use of manufactured gas would save more than 1,500,000 barrels of fuel oil.

Mr. Nelson proposed that a steering committee be immediately established, composed of representatives from the interested government agencies, to bring about coordinated government activity.

On July 6 the War Production Board acted favorably upon the Nelson recommendations. Immediately thereafter, the inter-agency steering committee was formed, composed of representatives of the Petroleum Administration for War, the Solid Fuels Administration, Office of Civilian Requirements, Office of War Information, Office of War Utilities and Office of Defense Transportation. Mr. Nelson appointed me chairman of that committee.

The committee directed that each agency bring into the program the industries with which it is concerned, inviting two or three representatives from each industry to an inter-industry meeting on conservation on August 24. Each of the seven industries were represented at that meeting. Among them were:

Colonel Henry, Asst. to President, Assoc. of American Railroads; Messrs. Kellogg, Sporn and Seymour, Electric Industry; John Battle, National Coal Association; Frank Earnest, Anthracite Industries; Ernest R. Acker, Chairman of War Activities Committee, American Gas Association; Philip Niles, American Water Works & Electric for the water industry.

In the meantime, special task groups were busy preparing reports covering detailed programs for each industry. For the electric industry, J. A. Krug, Director of the Office of War Utilities, appointed a Special Task Committee, the membership of which you know. It included Charlie Collier of the Georgia Power Company for this area and other equally qualified electric industry executives from other areas.

This Special Task Committee met in Washington on July 1 and 2, and again on July 13 when its "Report on Voluntary Conservation Program for Electric Utilities" was adopted by the group. A day later the report was unanimously approved by the Informal Electric Advisory Committee. This latter committee, which also met in Washington, was composed of 39 members from all parts of the country.

The electric industry report was then printed, and mailed to every electric utility in the country. As you know, it was a complete outline of recommendations on how the program should be carried out by each utility.

Mr. Krug's letter announcing the inauguration of the program stated: "In the electric utility industry, the installed generating capacity, together with capacity now under construction, is ample to meet all foreseeable electric needs. But it is essential to save the use of electricity wherever possible so as to reduce, directly or indirectly, the demands for materials, fuel transportation and manpower." That clearly registered with the public that the campaign was not necessitated by any lack of capacity on the part of your industry.

Similar procedures were followed by the six other industries, including meetings of special task committees and preparation of reports—and incidentally, the electric industry program was developed prior to all the others. But of that, more later.

While all these activities were in progress, the Office of War Information was preparing a great deal of publicity material. The first step was a joint newspaper statement by Messrs. Ickes, Eastman and Nelson on July 22, announcing the nationwide conservation program and calling for cooperation of industry to release critical resources—fuel, manpower, equipment and materials—for war. That statement closed with the following: "Cooperation of these industries in asking the public to use their services only as absolutely necessary represents a real sacrifice by them. We ask the American public to appreciate the sacrifice and to give them and the war effort enthusiastic and unstinting cooperation as this campaign develops."

At this point let me give you some of the highlights of a report I have from the Office of War Information on the principal steps taken by OWI to date to publicize the entire Conserve Critical Resources program. It was arranged as a timetable extending from the week of

July 19 to the week of November 1. It included so many items that I have condensed it. It contains the following activities following the joint statement by Messrs. Ickes, Eastman and Nelson already mentioned:

Summaries of the program giving advance tips and background information to editors of publications and special departments of magazines and newspapers, including general magazines, the business press, women's editors, plant publications, editorial writers, shopping newspapers, cartoon features, etc. These summaries appear in various general publications issued by OWI, as well as in special bulletins devoted exclusively to such background material for editors. The "Magazine War Guide" is an example of the latter. In one issue, for instance, the lead article, appearing on four pages, is devoted to the Conserve Critical Resources program, giving a rather detailed explanation of the plan and suggesting numerous copy and idea slants to editors. This publication, by the way, is highly regarded by magazine editors. Among its recent accomplishments was getting 186 magazines (as of September 15) to devote their cover illustrations to the Women in Necessary Civilian Jobs theme.

Feature articles in national magazines. An example is the article Donald M. Nelson entitled "What Do You Want Most?" which appeared in the October 2nd issue of "This Week." It explained in detail the purpose of the Conserve Critical Resource program and urged all Americans to give it their patriotic support.

Radio programs. These have included national network broadcasts, short messages given on other network programs, local spot announcements given by hundreds of stations, messages included in World Series and football broadcasts, children's programs, foreign language broadcasts, etc. Let me give you three typical examples. One is the broadcast given on the NBC network September 13 by Donald M. Nelson, Chairman of the War Production Board; Abe Fortas, Undersecretary of the Interior; and Joseph B. Eastman, Director of the Office of Defense Transportation. This was devoted entirely to the seven-industry campaign. In another type of radio activity the Dick Tracy program featured the campaign, getting the youngsters to sign "I Will Fight Waste" pledges, with the signatures to be inscribed on a Victory Honor Roll and sent to General Eisenhower. The third example is the spot announcement activity, where in one case "platters" or transcriptions were sent to the 12 WPB regional offices, which distributed them to local stations. These transcriptions were devoted to various features of the conservation campaign and are giving wide publicity to it.

Press releases. Many of these have been issued, some to daily newspapers, others to special publications such as the religious, foreign language, labor, rural and negro press. I have already described one of these releases to you—the joint statement by Messrs. Ickes, Nelson and Eastman. There have been many others, including a comprehensive statement issued September 8 announcing the "kick-off" of the campaign.

Other OWI informational activities have included letters to trade associations, booklets, posters, newspaper column and mat material, bulletins to retailers, booklets, insignia for industry advertising, graphics, etc. The "Official November Calendar of the Retailers War Program" is an example of the bulletins to retailers. All of page 3 is devoted to this conservation program. It was given the No. 1 spot.

All of the foregoing represents material which has been either published or otherwise in actual operation, or completed and ready for use. In addition, a great deal of follow-up activities are being planned, including work with the War Advertising Council on a variety of direct mail, radio and advertising material; new radio programs, photos of movie stars illustrating conservation methods, two posters—"Fuel Fights" and "Conserve Services," a million of which will be distributed early in November—etc. Among the ideas "in the works" is the attempt now being made to arrange with sponsors of about 20 of the most prominent national radio programs, such as those of the Bell Telephone System and Cities Service, to put outstanding Government officials on their program to explain the conservation campaign and urge public support.

By this time some of you may be thinking, "With all that information work going on, why is it I don't see more evidence of it in the newspapers I read?" In the first place, you may happen to be in one of the communities where the number of press releases which get into the newspapers is below the average for the country as a whole. News editors pick out the items that are most important from a local angle. It may be that for one reason or another —such as the progress of the campaign in your city—the newspapers may have selected other stories with more immediate reasons for publication.

On October 27 the Army and Navy announced that the dimouts for military security purposes in the coastal zone along the Atlantic, Pacific and Gulf of Mexico would be lifted on November 1. This is an importance piece of news for the entire Nation because it is an indication that the submarine warfare has abated. It also means that on the Pacific Coast the danger of attack from the Japanese has been minimized. This news was given to the press yesterday afternoon for use after 9 P. M. last night, yet an Atlanta daily this morning did not have one line on this important news item.

Then, too, it is not possible for us to see all the stories that are printed. Although you may not have seen a particular story, it may have escaped your notice when it appeared. Only the press clipping bureaus are able to get a comprehensive picture of what is going on, and they often miss on individual stories the same as the rest of us.

Another thing to remember is that the publicity activities will bear fruit to an increasing extent as magazines and other publications now being prepared are printed and circulated. Almost every day we see evidence of the swelling volume which is developing from the material that has been distributed to all media. For example, it has just come to my notice that some insurance companies have put the conservation story in their bulletins circulated to policyholders. It took time for these to be planned, written, printed and mailed.

Of course, we must recognize the fact that the Government has its limitations in getting the greatest possible informational coverage on stories of this kind.

Releases and advertisements emanating from business sources often stand out by contrast.

For this and other reasons, some industry groups such as steel, soap and paper have set up small committees working with the Government with adequate funds to give the necessary backdrop to their salvage and conservation programs. Divided among a number of concerns, the cost has not been unduly high for each of them. Of course, your individual companies are conducting local newspaper advertising and publicity

campaigns; your industry has no national promotional campaign to establish the campaign background using paid publicity which the WPB is not in a position to do.

With or without it, you may be sure the Government is putting its full weight and facilities back of the campaign. But the limitations of free space and facilities for the many government war programs must be recognized.

While we are here together, I want to bring you up to date on some of the other developments since the inter-industry and inter-agency committee meetings took place in July and August. One of these is the plan for organizing inter-industry committees in every city of 10,000 population or more.

When the Executive Committee of the Governors Conference met at Lincoln, Nebraska, in September, they decided to give their active support to the Conserve Critical Resources program. Following this Frank Bane, Executive Director of the Council of State Government, on September 29, wrote to all the governors advising that he had conferred with the War Production Board on how to pool all the Government's conservation efforts so that there would be a definite and clear channel of operation from the Federal Government to the States and through the States to the localities and their citizens.

Mr. Bane advised the governors that the War Production Board would send them full information on the Conserve Critical Resources program, and he told the governors: "I have assured the War Production Board that the States already have defense and war organization, set up several years ago for purposes such as this, and that these organizations always have been able to adapt their machinery to do the jobs on the home front that are necessary for the successful prosecution of the war."

On October 7 Charles E. Wilson, Executive Vice Chairman of the War Production Board, sent complete information on the program to the governors. The following paragraph from his letter explains the proposed method of operating:

"Since we believe that the program will be most effective when coordinated locally, I would like to have you take the lead in the formation of counterparts of the National Inter-Industry Committee in towns of 10,000 or more population. The chairman probably should be an individual from either the fuel or the utility industries and he should be careful, in forming his committee, to select people representing the seven participating industries, as well as representatives from chambers of commerce, retail organizations and newspapers. In some communities, we have noted that the participating industries have formed such committees on their own initiative. It may be desirable for the mayor to designate these as the official committees."

Mr. Wilson then said the WPB would send material on the program to the committees through the mayors, keeping them continuously advised of policy decisions and new developments and ideas.

A week after sending the letter to the governors, Mr. Wilson wrote all the mayors, calling attention to the program, enclosing a booklet of information, and asking their cooperation.

As a result of these moves, we have received a gratifying response from the governors, and it is expected that the local committees will be formed promptly. They should be a potent factor.

I have by this time devoted a lot of time reporting to you just what led to the Conserve Critical Resources program and the steps, one by one, that were taken in organizing and putting the program into effect. That carries us in this chronological account to the first part of October, after the program had been in operation.

As I have already said, the electric industry was the first to complete its plans. In fact, the initial newspaper advertising, started on September 15, was very complete throughout the entire country. However, there were many indications that the necessary follow-through on the program was not being actively pursued in many areas. Some of the reactions may be briefly summarized. In areas where a substantial degree of compliance had been obtained, complaints were being received that if other neighboring cities did not fall in line the merchants who had so willingly cooperated would cease their cooperation. Regional representative of the War Production Board reported practically no visible results. There was a mistaken belief upon the part of some members of the electric industry that the other participants in the program were not going ahead as fast as the electric industry and, therefore, the electric program should not be carried on vigorously. It was decided to hold another Electric Industry Task Committee in Washington to consider what could be done to obtain full support. The meeting was held on October 15, and the committee reached a consensus of opinion that progress could be definitely accelerated by continuing and intensifying the publicity program; by fully developing plans for working with national trade associations and local inter-industry committees; by having electric industry groups report to their members urging active participation and it urged all companies to take the necessary steps to carry the program forward; and by carrying out other specific plans, including participation in local activities by representatives of WPB regional offices.

The Task Committee expressed the confident belief that if the recommended measures were put into effect, the volluntary electric conservation program would reach its logical success.

Now let's examine for a few minutes the feeling I mentioned that perhaps the other participants were not carrying out their part of the program.

In the first place, it should be remembered that some of the other industries—such as the water systems and the coal and petroleum dealers—have had little previous experience in educational work of this kind. We all know that the water utilities have never done any advertising. Now they have developed a very fine program of demotion. And so it was no wonder that you did better than they at the start. It is the kind of a job which the electric industry is geared to do. For years it sales and publicity efforts have been outstanding. As to the transportation, gas and communications industries, it was more of a matter of intensifying their existing conservation activities and coordinating them with this program. In fact, many of the industries represented on the Committee feel that they have been carrying on their part since the beginning of the war, while the electric industry is just starting.

Another factor which we must continuously remember is that the results of the conservation you do is *more apparent* to everyone. Everyone notices that lights are turned out, but only those directly concerned know when gas is turned off. The same applies to many of the other industries. In view of this fact, you can do much to assist in securing public appreciation of the overall needs for the program through a proper presentation

of the reason why you ask for "Lights out."

Now let's look at it another way. You will agree every undertaking must have a leader. Why shouldn't it be you? We all know that in any endeavor the participants do not all do an equal job. This is even true on this program within the electric industry. Why not take the credit for being leaders in a vitally important war activity? By so doing I am sure that the electric industry can build a great deal of valuable goodwill. Let me cite a case in point and there are others:

In an Eastern city the merchants' association had tried for a long time to close their establishments on one of the weekday nights, but the owner of the largest store resisted all efforts to gain his cooperation. He was an individualist whose attitude simply could not be pierced by any of the usual appeals. In fact he would not become a member of the association. But then something happened that demonstrated he could be reached. The electric company carried out a real job of swinging the community into line on the conservation program. The hardshelled merchant could hardly believe his eyes. Here was a business organization deliberately asking the public to use less of its service which was available for sale in adequate quantities.

The hardboiled store owner became so impressed by what he termed "unselfish service" that he devoted a good share of his radio program to commending the electric company publicly. He actually is advertising for conservation. The hardest business man to convince on other matters was won over to enthusiasm by the patriotic work of the power company. If he were impressed, what about the rest of the public?

There is no doubt that your industry can do a superb job in this conservation drive. The only hurdle is for all of you to lose no time in accommodating your minds to reversing your selling tactics. And it has been proved that such a turnabout is not difficult. In fact, we have observed that the companies which have a reputation for doing the best jobs in promoting the use of electricity are now doing the best job of "demoting" its use.

Charlie Collier's company here in Atlanta is an example of what I am talking about. He has been doing a splendid job on his copy and literature—as good as, or perhaps better than, any other system in the country. We all know the intensive promotional activities of Georgia Power in peacetime.

Now what is required beyond what you are already doing? We all appreciate the remarkable work you have done in advertising campaigns, but we know also that the job can't be done by newspaper ads alone. They must be implemented. Just as it takes shoe leather to sell electric service, so will it take shoe leather to unsell it. This is a cause whose importance demands getting your retail merchants together and persuading them to adopt conservation as a group. It also merits literally ringing doorbells—just as you formerly did in selling more service. Personal salesmanship still is the final clincher.

The reward? A quicker achievement of victory—that is a supreme reward in which all of us have the most heartfelt interest.

But there is something to be gained beyond victory—call it a dividend. For your industry has the one visible thing which can be seen by all the public. When you sacrifice it for the cause of victory, you bring public realization of the service you have done.

You can and you have the know-how to do your "unselling" in a way that will be beneficial to your post-war expansion. Electricity, of course, will be one of the major factors in that world we look forward to after this grim war has ended with victory.

I AM PRIVATE ENTERPRISE

By Benjamin DeCasseres

In the New York Journal-American

I am the Spirit of Private Enterprise.

Wherever I have existed freedom of mind and body have existed.

Wherever I have been murdered by collectivist laws and governmental strangulation freedom of mind and freedom of body have died.

I was the physical lever of Athenian civilization.

I died in the collectivist Feudal ages.

I was resurrected in the Renaissance, beginning the modern age.

With the rebirth of free private trading came the vastest expansion in the arts and sciences the world has ever known.

I, Private Enterprise, have brought men of the same countries and men of distant countries closer together in friendlier intercourse than all the Socialistic and Communistic doctrines combined.

My trade-routes have been the routes of human progress.

I am the expression and sustainer of all that is lordly in the human soul—SELF-RELIANCE, the ADVENTUROUS SPIRIT, emotional and mental INITIATIVE, AMBITION and INVENTIVE RESOURCEFULNESS.

With my rebirth in the Renaissance the human level of living began to rise.

The shackles on slave labor began to rust and crack.

Money became international.

Man at my touch took on something of the aspect of a creative god.

I, Private Enterprise, built America.

If she is a giant today in production it is I who have made her a giant.

I cleared her forests.

I built her railroads.

I tunneled her mountains.

I erected her factories, dug the coal and ore in her mines and sent out her ships on Seven Seas.

In my brain was born every creature comfort you enjoy.

I, Private Enterprise, with my free laborers and my unshackled captains of industry, built the muskets, the airplanes, the tanks, the submarines, the great guns that were used in the Revolutionary, Civil and World War No. I and that are now protecting the United States from invasion.

I am the hope of Europe and Asia.

I, Private Enterprise, am the working classes, the middle classes and the well-to-do classes.

I am the butcher shop, the bank, the newsstand, the great department store, the giant furnaces of Detroit and Pittsburgh and the electric light.

I, Private Enterprise, am Edison, Ericsson, Goodyear, Wanamaker, Westinghouse, Fulton, Whitney, Morse and the Wright brothers.

I am that FREE BUSINESS big and little, on which civilization alone depends.

I am the body of a great spiritual entity—LIBERTY.

I am the body of a great sociological and biological fact—SELF-INTEREST.

It is I, Private and Free Enterprise, that is winning this war for Russia, England, China and the U.S.A.

I, Private Enterprise, am the power behind your son, your father, your brother fighting for you in Africa and the Pacific.

I am the Minute Man of Uncle Sam.

I am AMERICA.

I am the OLD DEAL.

I am the very essence and body of Jeffersonian democracy, for I am PRIVATE PROPERTY and PERSONAL LIBERTY.

Investment Features of Municipal Utility Bonds Compared With Private Company Issues

By Kinsey M. Robinson

President, The Washington Water Power Company

This presentation was made by Mr. Robinson Nov. 10, before the Municipal Forum of New York, in debate with Dr. John Bauer, Public Utility Editor of the National Municipal Review and a consultant on public utility valuations, who presented the viewpoint of the public bodies on the subject "The investment features of the securities, payable solely from revenues, issued by public bodies, to finance the purchase or construction of revenue producing utilities, compared with those issued by privately owned utility companies."

SINCE I was to be in New York at this time I certainly appreciate this opportunity of appearing before your group, particularly on this subject because I realize that it is one very important to those of us in private utility industry.

I do not know why I was chosen to speak on the financial end of this subject. Certainly, I have never pretended to be an expert on the financial side of the utility business. I have gotten most of my advice here in the Street through association over the past few years. However, in thirty years of experience in the utility business I have gathered some rather definite ideas about the successful operation of a utility from a financial standpoint. I have been in the West for a good many years, and I think I would like to talk upon our own northwestern situation, because as I have heard on the Street here, that seems to be the area where bond salesmen may have an opportunity to make some of this big money that the Doctor just mentioned. However, I think it is further away now than it was four or five years ago.

Difficult to Determine Revenue Bond Investment Merits

Certainly, a small municipal or small public operation is largely dependent upon the type of management and operation as to whether the bonds are any good or not. The lack of regulation gives you no opportunity to check their sometimes funny bookkeeping and keep in touch with the actual situation. Of course, that appeals to a good many people who are on the public ownership side, lack of regulation, and therefore an opportunity to do some of these things. Revenue bonds in the power business are a new experiment. True, some municipalities have been in operation for a good many years but the real opportunity for revenue bonds really came along with the New Deal through PWA loans and grants. It is rather difficult to make a formula to determine the investment characteristics of that kind of a bond. You have the problem of determining the kind of management, the political management of the operation of the property, and from that standpoint I don't think anyone can tell what kind of management you are going to have until after they have been operating, and that, of course, is after the bonds have been sold.

Securities of Privately Owned Utility Companies Have High Investment Merit

In private utility issues that are outstanding, first, you have the past performance of the company, its known management policy. You know whether you want to make an investment in the particular utility. In the private utility industry during the past few years the bond ratio has been approaching 50 per cent of property, preferred stock around 25 per cent and the other 25 per cent in common stock. True, there has been inflation in some plant accounts, but that is being rapidly wiped out. Certainly, you can get pretty good data on any privately-owned utility today. At least, the government has spent enough money getting it. There certainly is some cushion in the equity of most of the utilities that I know. They have been large contributors to the taxing units—local, state and federal. Rates and financing are subject to regulation by federal government and nearly always by state authorities. The security owner has a chance in the case of bonds and many times of preferred stock, to change the management if he finds they are not looking out for the interest of the security holders. That is practically impossible in the case of revenue bonds. During the past few years there has been a definite trend toward a better understanding of the benefits of private utility management than in the years gone by. This trend has been shown in some of the recent elections, such as El Paso, Tucson, etc.

Dangers in Revenue Bonds

I was going to talk about the danger of revenue bonds, but I am somewhat inclined to leave Dr. Bauer's statement with you. I think there is a tremendous danger there and those are the things that salesmen and buyers should look at. To me they are not bonds in any sense of the word. They must be considered either all common stock or part bonds, part preferred stock and part common stock. Certainly, some of the interest rates at which they have been sold in recent years do not look like anyone has been giving much consideration to any common stock that might be represented by the revenue bonds.

What is going to happen to revenue bonds in a period of inflation? I think this is even more serious than in a depression. Operating costs rise but there is nothing to do about it. How are you going to raise rates to take care of interest and amortization of bonds when the Commissioners of the Districts, when they were formed, were elected on a promise to reduce rates? They are certainly not going to raise rates above the rates of surrounding utilities in the same area. You have not only to look at the property that you are buying and the prospective revenues from that property, and the rate reductions that you have to make to satisfy the people, but you have to look at the political aspect of the community because once a property goes into political ownership the commissioners have to depend on votes and they are not going to do anything that will prevent their earning their $10 a day.

I think there is another danger that does not come from the federal government and that is local taxes on the operation of utilities. Cities, counties and states are beginning to find out what it

means, in the light of tax revenues, when any large block of privately owned property goes over to any kind of public operation. In some counties where we serve we pay 50 per cent of the taxes. How is that county going to operate if our property goes over to public operation? Are those people going to stand 100 per cent increase in their taxes? They haven't shown that kind of inclination lately! Second, public utility districts are not subject to regulation by federal or state agencies, and once the district is formed and three commissioners elected, they require no further vote of the people. The commissioners in most instances have no utility experience at all, and generally have very little business experience of any kind. In fact, many of the districts out our way would disband if they were allowed the second vote, because they were formed as a club over our head and later since engineers and professional appraisers have gotten to talking to them they find they are going into business whether they like it or not. Political management cannot be as efficient as business management. All you have to do is to vote the right ticket to become the manager of a public power district. I think there is a fundamental loss of good business management that cannot be replaced in many of these situations. There are revenue bonds that will be issued, and have been issued, that are just as good as any securities there are, but certainly it is going to require a closer study of the situation when revenue bonds are issued than when bonds of private companies are issued.

Electric Rates Are Now Low in the Northwest

Our rates are low in the northwest. Eliminating Bonneville sales to the light metal industries and for resale for the year 1942 shows that the public bodies in Washington sold 1,845,969,712 kwhr for $16,293,379.32, an average of 9 mills per kwhr, while the private companies sold 2,767,021,133 kwhr for $30,703,929.42, an average of 11 mills per kwhr. In the past year our company sold 1,186,505,000 kwhr for $10,381,189.00, an average of 8¾ mills per kwhr. The tax differential is the difference between the 11 and 9 mill rate, so the rate reductions are going to be largely hot air that are promised from a lot of public operations if they take over these private companies. Of course, there is the tax differential, but I believe that with prospects after the war of our national debt and the problem in the local, state, county and cities of getting money after the war, the publicly-owned utility will certainly get a good second look as to whether it can contribute to that problem.

Public Utility District Revenue Bonds Headed for Trouble

We have in Washington a number of public utility districts. The *Oregon Voter* for October 30, 1942, gave the following:

"Gray's Harbor County P.U.D. has been in operation for three years. Operating Revenue—$775,821; Net Profit and Loss Gain—$136,041; Bond Retirement—$123,000; Margin—$13,000. That District has $3,232,000 of bonds outstanding.

"Then there is Cowlitz County P.U.D., which has been in operation for two years. Their operating revenue was $1,010,994; net profit—$112,575; bond retirement—$138,000; deficit—$25,425. The thing that has saved them is the fact that it is their second year of operation and they do not have bond amortization until the third year. The bondholder will not know for another year just where he stands."

Mason County is another small one that is really in the red. They have some sort of funny bookkeeping that we do not understand.

"Expert" Witness Market Value Testimony Far Below Jury Award

The following review of the condemnation cases that have been before the courts indicate the price that must be paid for present systems:

Cowlitz County vs Washington Gas & Electric Co. Market value testimony, including going value of District witnesses—$4,010,000. The jury award was $5,922,556 with interest, bringing it up to $6,011,506 by date of purchase.

Tri-County cases vs Puget Sound Power & Light Co. Three district witnesses testified average RCN* less depreciation was $4,627,000, and average market value was $4,530,000, but the jury said the fair value was $7,600,000, or $3,000,000 above the district witnesses market value figure.

Whatcom County P.U.D. vs Puget Sound Power & Light Co. Three district witnesses testified reconstruction cost new less depreciation was from $2,596,000 to $2,769,000 and market value from $2,835,000 to $2,895,000, but the jury said the value was $5,000,000, or 72 per cent more than the district's highest figure.

In the Okanogan & Douglas County P.U.D. vs Washington Water Power Company, district witnesses' testimony claimed market value from $1,050,000 to $1,255,000, but the jury gave us $2,367,000. Dr. Bauer as an expert market value witness testified to a market value of $1,050,000, but a local county jury of prospective future owners of the property said the fair value was 2¼ times Dr. Bauer's figures.

In the Snohomish County P.U.D. vs Puget Sound Power & Light Company case, three district witnesses testified market value and severance damages were from $3,700,000 to $4,080,000, but the jury awarded the company $9,500,000. Again, the low figure of $3,700,000, or 39 per cent of the jury award, was Dr. Bauer's best judgment.

A number of other condemnation suits are now pending but the Clallam County suit is the only one set for early trial. We have come to the conclusion that local people, even though they expect to be the prospective owners, are not yet willing to steal property from a private citizen.

Certainly the Consumers Public Power District in Nebraska has not yet proved a successful operating project. Many of these are going to take time to tell what is going to happen.

Tacoma Project Costs Over Twice First Issue of Revenue Bonds

Another interesting case is the Tacoma Nisqually Project. It was started with an original estimate of $11,000,000 total cost and a proposed sale of $8,000,000 in revenue bonds. The present estimate is nearly $20,000,000 and this estimate became known long after the first issue of revenue bonds was sold to the public. Tacoma, however, has been distributing power for many years and has been well managed and had through early years of high rates and practically no taxes paid off its earlier debt. Were this its initial effort a different story would be in store for the revenue bondholders. Unless a utility is stagnant it can never be bond free as it must invest about five dollars for each new dollar of annual revenue.

Securities Issued by Privately Owned Utility Companies Provide Safe Backlog for Investors

The institutional owners of private bonds find they were quite a bulwark in the last depression, and they will be in the next inflation or depression period, but if the socialization of the private utilities meets with the success hoped for by the political power advocates, and the present private company bonds are

(*Continued on page* 384)

* Reconstruction cost new.

Where Do We Go From Here?

By S. P. Vecker

Vice-President, Carolina Power and Light Company

Presented before the General Sales Conference of the Southeastern Electric Exchange, Atlanta, Oct. 28.

MANY of us can recall vividly World War I and the song entitled "Where do we go from here?" The turn of events after that war with its big boom and deep depression gave tragic proof to the fact that neither Government nor business had given sufficient consideration to the question posed in that song which our fighting men sang as a marching tune.

The bitter lesson learned from the last war is prompting business and Government to seek an adequate and satisfactory answer to the postwar question, "Where do we go from here?" Each day we see emblazoned across the pages of newspapers references to postwar plans by business. We hear discussions on the radio of the Government's National Resources Planning Board report.

I refer to the fact that both business and Government are engaged now in making plans for prosperity after the war for this one reason and one alone; namely, to remind you that a plan of some kind will be available when we return to peace-time conditions. If commerce and industry fail to consolidate their thinking into a common understandable plan which will enable them to conduct privately-owned business at a fair profit, the Government will step in and launch a subsidized WPA program more extensive and by far more expensive than the late unlamented program.

With cut-backs and cancellations in many major war production plants being ordered day by day and with consequent returning to the rolls of available workers of thousands of men and women, business men must begin to eye seriously and not pass over as something to be discussed in more leisurely moments the problems which will face us in the postwar re-establishment of normal business activities.

It is characteristic of our industry to proceed with care and precision—operations involving change must be blueprinted and studied carefully. It is natural to assume that we shall encounter mild top-side management resistance at least to plans which are premised on revolutionary changes. The public on the other hand welcomes change. Those of us here today see, beyond the war, sales possibilities which stagger the imagination. It is our responsibility, therefore, as well as our opportunity to be in position to interpret change for the benefit of the public and management.

But let us not be deceived. The dangers of delay in effecting a proper transition from war to peace are in some respects as serious as those involved in the transition from peace to war. During the late 30's we talked about mobilizing for the conflict into which we have been plunged. You will remember there was a plan. All our resources were to be ready to go into instant action the moment the emergency arose. Well—you know how long it took—almost two years.

If we assume that the M-day ahead of us now will present no problems that cannot be coped with upon a moment's notice, what will we do when millions of our men come back from the fighting fronts at the very time when the millions of our war production jobs in this country are folding up? Unless there are jobs for about 95 per cent of those who are able and willing to work, there will be widespread fear and lack of opportunity which will drive labor units, agricultural groups and business interests to take self-protective measures. So you see, the gamble is too great to depend upon automatic solutions to problems which our next M-day will present.

Please do not understand that mass reemployment is our only problem—it is, however, the crux of the economic problem. American business generally and the electric utility specifically faces a great responsibility, and management in this area will look to us in this room for plans which will provide the answers to many major problems. Unfortunately we have no precedent upon which such plans may be based. This war, unlike the last, may not end suddenly—it may fold up country by country, territory after territory. So production in some plants served by our companies will stop sooner than in others. Yes, postwar this time, will be entirely different from what it was the last time. For example:

1. In the last war only a part of American industry was directly effected. In this war all American industry is directly affected.

2. In the last war there was little curtailment of the manufacture of domestic consumer merchandise. In this war such manufacture has been drastically curtailed.

3. In the last war with consumer merchandise available prices went up and people spent their money. In this war prices to some extent have been controlled and spending margins have gone into Government bonds to an extent far beyond what happened in the last war.

4. In the last war industrial concerns were permitted to retain a substantial share of their earnings. In this war most of their earnings are being taken by the Government through taxes and renegotiation.

and 5. In this war more millions will be released by the armed services and by war production industries than were thrown into unemployment at the close of the last war.

Now, let us add all these factors up and see what we have. On the one hand commerce and industry will have very little reserve money left in their respective treasuries. On the other hand the public with much monies saved up in Government bonds will be waiting to buy refrigerators, ranges, automobiles, freezer lockers, television sets, radios, and numerous other items denied them during the war—waiting to spend it on whatever improved or new products industry will have ready to present.

In addition to this, all of Europe and much of the rest of the world will be in need of rehabilitation. Such rehabilitation will require the manufacture of various products many of which America will be called upon to supply.

Now that we have a premise upon which to base our plans, what would seem the most logical procedure? I offer the following twenty point program, not with the thought that it can solve all of our post war problems, rather that it may serve as an aid in preparing your business and mine to meet the rapidly changing conditions during that most

important period immediately following peace.

1. Designate one member of the organization or select a committee to handle the planning program.

2. Develop a tentative plan immediately, listing *first* things *first* to be done in the event the war comes to an unexpected conclusion.

3. Estimate the potential volume of industrial business which may be expected to continue unabated after the war.

4. Estimate the potential volume of industrial business which you are reasonably certain will be lost as a result of canceled contracts.

5. Estimate the potential volume of industrial business that may be maintained or created through reconversion to peace-time production.

6. Study the possibilities of locating new industries for the purpose of manufacturing products not formerly made in your area.

7. Be prepared to promote higher levels of street lighting to provide adequate safety under greatly increased traffic conditions.

8. Develop a plan for promoting adequate wiring among prospective modernization, expansion and new construction of all types of buildings, utilizing many of the new ideas developed by the National Adequate Wiring Bureau.

9. Study the possibilities of recapturing commercial load lost through business failures, restrictive orders and conservation programs.

10. Be ready with modernization plans employing many new services which will bring in new and additional revenue from commercial establishments.

11. Determine market possibilities among residential customers, listing outmoded or worn out equipment which should be replaced following the cessation of hostilities.

12. Devise plans for the promotion of the sale of new and revolutionary equipment to residential customers.

13. Be prepared to construct immediately the hundreds of miles of rural lines which could not be built during the war because of restrictions.

14. Launch an agricultural development program designed to further enhance the economic status of the farmer.

15. Study the possibilities of maintaining present dealer outlets and the establishment of additional sources of appliance distribution immediately following the war.

16. Anticipate changes which conditions may influence in the overall sales policy.

17. Draw a personnel chart for your postwar sales organization indicating the number of positions which most likely will be filled by the return of former sales employees and develop plans for the immediate employment of new personnel.

18. Prepare sales training courses designed to cope with changed market conditions, employing such courses for instructing present personnel.

19. Anticipate the type of advertising and promotion required for one or two years following victory.

20. Project budget plans making allowances if need be for further reduction in expenses between war's end and the time when reconversion will be completed and new products are ready for promotion.

Since time will not permit a full discussion of each of the twenty points just enumerated, by way of summary I shall emphasize a few of the more pertinent suggestions. By all means develop a basic plan—one which could become operative immediately or which may be changed from time to time as conditions warrant a change.

Inasmuch as it seems likely that a considerable loss of load will be experienced in the industrial classification when war production contracts are canceled, it is imperative that we know how and where to look for replacement business, bearing in mind that lighting is highly compensatory.

In the commercial field the base load is lighting—it has suffered through business failures, restrictions and conservation orders. It is heartening to note, however, that even the Federal agencies responsible for the issuance of restrictive orders recognize the necessity of certain uses of lighting which many commercial customers had considered non-essential. I refer primarily to window and display lighting.

We will have immediate opportunity to increase the residential lighting load, following this war, for it is felt that as people resume their normal living habits there will be sharp increases in home lighting.

While on the subject of lighting, I make this one further comment: The Seven Industry National Conservation Program launched on September 15 has served to convince municipal authorities that present levels of street lighting are but minimum requirements for safety. Attempts to reduce present levels in order to comply with the spirit of the conservation program have served to emphasize the necessity for higher street lighting intensities when equipment becomes available again.

More time than I have been allotted on this program could be devoted to a discussion of the possibilities in the postwar marketing of residential appliances. Public interests in things to come in household equipment is such that we need to be concerned with methods of distribution, and certainly this is one phase of the planning that cannot be postponed.

Rural electrification must occupy a most important place on your postwar calendar. I am sure that your plans embody an early resumption as well as an aggressive expansion of rural electrification—a program even greater than that of the pre-war period.

I am happy indeed that the record of the privately-owned utility industry is one of constant, close, coordination with all agencies. I am happy indeed that our industry has not permitted controversies to arise within its members. On the contrary, our industry through its joint national advertising, radio programs, and operating councils has become more closely united than ever before. As we go forward together—cooperating and coordinating—we all will grow better and bigger—our responsibilities to customers and communities will increase proportionally and our industry's common goal, appreciation for service well rendered, will be our reward.

Now this final reference to the twenty-point postwar program: Plans under any and all conditions should not only be self-supporting, they should return a profit. Although our industry will not be called upon to finance a program of reconversion, there is every indication that money will be needed for expansion. To state it differently, a return to peace-time conditions will find us not manufacturing a new product—power companies will not have to stop and retool after the war as will war-born plants, but to quote Ash Collins we will have to "repackage, retell and resell."

The draining off of seed-money through ever-increasing taxes creates a problem which is very real at present and which can seriously handicap our efforts in the future. If this tax trend continues, industry will find its treasury depleted, and consequently will not be in position to supply the jobs which a

(*Continued on page* 384)

Better Care—Less Repair

The National Appliance Conservation Program Is Launched

By C. E. Greenwood

Commercial Director, Edison Electric Institute

THE experts may disagree on the availability of replacements of essential electrical equipment in 1944, and even the volume of repair parts using critical materials which may be required to take care of the maintenance of present electrical servants in the homes of millions of consumers. However, there is no disagreement on the definite public need for the more important time and labor savers to be in operating condition, such as refrigerating, heating, laundry, cleaning, and cooking equipment.

The experiences of the British war worker in dependence on the efficiency of electrical equipment in helping home makers to keep the household running in trying war years when time is at a premium has been repeated in the United States. In the largest industrial centers, where factories are on three shifts, work in many homes is on three shifts likewise. The break-down of laundry and cleaning equipment has been considered one of the important reasons for absenteeism of women in industry.

As pointed out in the Plan Book of the National Appliance Conservation Program, the average home is estimated to have seven electric appliances, five electrical outlets, five switches, four fuses, twenty-four sockets, four portable lamps, that is, there are forty-nine vital electric spots in the home, making a national total of 1,300,000,000. Keeping electrical equipment in service, perhaps just the ability to make simple adjustments and repairs, will save the home front over a billion hours a year of valuable time and work in war services. *Better Care* will reduce the need for repair.

The manpower problem affects the repair situation in the appliance factories. It has been pressing also with most dealers. The draft on critical materials for Army and Navy supplies has created a shortage, resulting in long delays in the return of customers' appliances left for fixing-up.

Utilities have been cognizant of the needs of their customers for months, and, if not in the repair business themselves, have assisted in every way possible with their local dealers. Many companies have had comprehensive plans of Appliance Restoration introducing "trading posts" for appliances and "swap plans." Idle electric servants in the houses of

BETTER CARE
LESS REPAIR
CONSERVE
Electric Servants
WHOLESALER
UTILITY
DEALER
NATIONAL APPLIANCE CONSERVATION PROGRAM
JANUARY
FEBRUARY
MARCH
APRIL
LIGHTING
DO'S and DONT'S
Clean lamp bowls and bulbs regularly with a damp cloth. Dry before using.
Use shades with white linings to reflect light.
and water solution.
Don't leave lamps burning in unoccupied rooms.
Don't place bulbs in water.
Don't wash a lighted or hot bulb with a cold cloth.
gether.
DO'S and DONT'S
Keep cords free from kinks and knots.
Don't stand heavy furniture on lamp cords or run under
ELECTRIC CORDS
MIXER
Turn switch off immediately if motor stalls due to too heavy a load.
Oil motor according to manufacturer's instructions.
Be sure beaters are properly in place before starting motor.
Don't attempt to clean attachment such as meat cutter without taking apart.
Don't overload bowl. This makes motor work too hard.
Don't use a spoon in mixer bowl while in operation.
Don't forget to clean and dry beaters after each use.
Flush tank occasionally to reduce sediment. Turn off switch until tank is refilled.
Don't neglect leaky hot water faucets.
Don't set thermostat for a temperature higher than that recommended by manufacturer.
Don't wash under a running faucet.
WATER HEATER
Every day of every month, through 1944, you'll want your electric servants to keep working for you. Refer to the list of hints (above, inside) on care and use of your appliances — and for additional information call . . .
YOUR IMPRINT HERE

Calendar-check-list for consumer distribution by utilities and dealers

their customers have been bought for cash on a junk basis or have been traded-in for war saving stamps. These devices have been repaired, if possible and practicable, and then resold. Otherwise the parts of equipment turned in have been junked.

Also, utilities have advised their customers through newspaper advertising, booklets, displays, and lectures of the critical maintenance situation and the need for care in operation and use of present equipment in order to minimize the demands for servicing.

The orthodox question is therefore asked. "Why in the light of present local activities do we need a 'NATIONAL' program?" The answer may be readily given. This problem of keeping millions of electrical servants running is of national importance. A National Program of cooperation with all branches of the electrical industry, including all the retailers in the department stores, furniture and hardware groups, will give emphasis to this movement and furnish a background for individual effort.

A Committee of utility commercial executives, representing the Edison Electric Institute, under the dynamic leadership of M. R. Rodger, Middle West Service Company, have joined forces with a small group of representatives of leading manufacturers in the development of a program for 1944. This is generally considered to be a vital year in the demand for appliance maintenance. Many thousands of essential electric devices for home operation will wear out in the coming months.

Conservation then will be the watchword, and since the Office of War Utilities already have a national program in operation for the conservation of fuels, transportation, and manpower, this Program, sponsored by the Institute, will be coordinated with it.

As Mr. J. A. Krug of the Office of War Utilities has stated in a letter on the subject:

"The BETTER CARE—LESS REPAIR campaign ties in with our desire that all users of appliances will maintain them so that they may last longer and be available for use by those whose help is needed for the prosecution of the war."

The activity was officially announced to Chief Utility Executives by President C. W. Kellogg of the Edison Electric Institute in a letter dated October 25. Mr. Rodger held a meeting of representatives of Trade Press and National consumer magazines, interested in appliances maintenance problems on November 19 at the Hotel Biltmore, where complete details of the activity were outlined and promotional materials to be used were on display. Among the speakers were H. F. Barnes of General Electric Company, Cleveland, Ohio, and Roger Bolin, of Westinghouse Electric and Manufacturing Company, who served on the joint committee in the development of the Program.

BETTER CARE
LESS REPAIR
Conserve Electric Servants
Make This Store Your Appliance Repair Headquarters
Home Heating Equipment
Ask us for your Better Care... Less Repair (r) Check List—Free

Utility and dealer window display material

Among the promotional material is a consumer piece, in calendar form, with a comprehensive list of Do's and Don'ts in the use of equipment. Hung on the kitchen door or wall it will be a ready reference and guide to the home maker in taking care of her equipment in order that it may last longer. Fully realizing that many companies have supplied maintenance booklets to their customers, the Committee submits that the calendar will act as an effective supplemental follow-up on what may have been done to date.

Other items for utility and retailers display bearing the designed symbol of the Program include three different window streamers, a set of two-color pennants, a four-page Dealer Folder, which is a condensed Plan Book and a series of newspaper mats for local advertising.

A large group of manufacturers have agreed to carry the BETTER CARE—LESS REPAIR slogan in their national advertising and those having radio programs will "plug" the maintenance activity. Copies of this material have been mailed to the Commercial executives of the leading electric utility companies, with an order card showing the following prices:

Better Care—Less Repair streamer	6c
"Make This Store Your Headquarters" streamer	4c
"Come in and Get your Check-List" streamer	3c
Calendar-Check-List (two colors)	2c
Four-page Dealer Folder (two colors)	5c
Set of 23 display pennants	40c
Assembled display kits (including about 28 pieces)	70c
Imprinting of Check-Lists (regardless of quantity)	$5.00

Serving on the National Committee with Chairman M. R. Rodger are the following utility men:

Advisory Committee—

C. A. Collier, Georgia Power Co., Atlanta, Ga.
R. D. Cutler, The Hartford Electric Light Co., Hartford, Conn.
D. M. DeBard, Stone & Webster Service Corp., New York, N. Y.
Ted B. Ferguson, Texas Power & Light Co., Dallas, Texas.
R. E. Fisher, Pacific Gas & Electric Co., San Francisco, Calif.
C. E. Michel, Union Electric Co. of Missouri, St. Louis, Mo.
G. W. Ousler, Duquesne Light Co., Pittsburgh, Pa.
W. E. Parrott, Ebasco Services, Inc., New York, N. Y.
H. M. Sawyer, The American Gas & Electric Service Corp., New York, N. Y.
M. E. Skinner, Buffalo Niagara & Eastern Power Corp., Buffalo, N. Y.
Edwin Vennard, Middle West Service Co., Chicago, Ill.
G. E. Whitwell, Philadelphia Electric Co., Philadelphia, Pa.
H. E. Young, Northern States Power Co., Minneapolis, Minn.

Planning Committee—

A. C. Crandall, Indianapolis Power & Light Co., Indianapolis, Ind.
J. E. North, The Cleveland Electric Illuminating Co., Cleveland, Ohio
L. R. Parker, Commonwealth & Southern Corp., New York, N. Y.
Harry Restofski, West Penn Power Co., Pittsburgh, Pa.
C. A. Stevens, Public Service Electric & Gas Co., Newark, N. J.

Fatal Accidents a Challenge to the Industry

By D. C. Stewart

Member, Edison Electric Institute Accident Prevention Committee

ONCE AGAIN, through the generous cooperation of Electric Light and Power enterprises everywhere throughout the nation, the Edison Electric Institute Accident Prevention Committee is able to present another review and classification of fatal accidents occurring within the industry during one year. The first report (EEI Bulletin, May 1943) covered the industry's 1941 experience. This second report summarizes 121 of the 128 fatal accidents reported during 1942.

The compilation of these two reports was made possible only through the keen interest and participation of many individuals. There has been a fine "all for one and one for all" spirit displayed in thus joining battle with our common enemy—accidents. The Committee desires again to express its sincere appreciation to all who helped to make this second compilation possible.

The following table gives a summary of the 2 years by types of accidents and by work locations:

SUMMARY OF FATAL ACCIDENTS OCCURRING WITHIN THE ELECTRIC LIGHT AND POWER INDUSTRY DURING 1941 AND 1942

		1941	*1942*
Number of fatal accidents		134	128
Detailed reports included in tabulations		121	121
Accident Type	*Location*		
Electric Shock or Burn	Line work on poles	52	50
	Line work on ground	14	5
	Line work in trees	3	0
	Line work at building	1	1
	Cable work underground	0	1
	At stations, on equipment, etc.	17	24
	Other miscellaneous	3	0
		90—74.4%	81—66.9%
Falls	Line work, poles or ladders	8	6
	Steam plants	1	7
	Hydro plants	1	1
	Substations	0	3
	Other miscellaneous	1	2
		11— 9.1%	19—15.7%
Motor Vehicles	Highways	4	8
	Railway Crossings	4	2
	Steam plants	0	1
		8— 6.6%	11— 9.1%
All other types and locations		12— 9.9%	10— 8.3%
Totals		121–100.0%	121–100.0%

1942 Experience Parallels that of 1941

There were fewer fatal accidents in 1942, which might at first thought seem to represent improvement. However, when the *rates* are computed on a man-hour basis the two years were identical. Some changes did take place in the distribution of accidents among and within groups.

Shock and burn cases occurring during the course of line work on the ground, for example, dropped from 14 in 1941 to 5 in 1943. In this group in 1941 there were no less than 7 cases due to wires being strung near energized circuits flipping into or in some manner contacting energized conductors. There were no such cases reported in 1942. Electric shock and burn accidents in and around stations jumped from 11 in 1941 to 19 in 1942.

Deaths due to falls in steam plants were up sharply from 1 in 1941 to 7 in 1942 and in substations from none in 1941 to 3 in 1942.

Such changes might be accounted for in part if changes in man-hour exposures within groups were known. However, the Committee does not have sufficiently reliable data on exposures at the present time to attempt such an analysis, nor indeed does it appear to be necessary.

The 1942 report leads to the same conclusions as those drawn from the 1941 report. The same principal enemies are disclosed by both reports. The second report does little more than draw the lines of battle more sharply.

Electric shock or burn accidents claimed most of the lives that were lost. Of those most occurred in connection with line work on poles, with accidents in and around stations an important second.

The Committee believes that immediate and substantial progress can be made in reducing the number of such accidents. Furthermore the Committee believes that this improvement can be effected without extensive changes in present design, upheavals in work methods or expenditures of more than nominal sums of money. All that is needed for substantial progress is greater recognition of the importance of a few simple safe practices, adequately described in the references below, and their effective introduction into the framework of day to day work procedures.

This stubborn, treacherous enemy, ACCIDENTS, has challenged an industry which, in its whole remarkable history of growth and progress, has never been content to remain for long in a period of stagnation. Will we permit our accident curves, once so dynamic on the downward side, to sidle sideways in the years ahead as they have been doing over the past few years?

It is hardly conceivable that managements which have solved and are solving the many complex problems of the industry should answer yes to such a question when progress depends upon the application of no more than a fraction of that same management thought, study and well considered action to this vital question of accident prevention. There can be only one answer when so many human lives and the happiness of so many are at stake!

SOME KEYS TO ACTION

1. Cover Wires and Save Linemen's Lives by G. G. Grieve, *Electric Light and Power*, November, 1941.

2. Safe Practices Key to Combating Warm Weather Electrical Hazards by W. R. Smith and D. C. Stewart, EEI BULLETIN, May, 1942.

3. A Public Utility Safety Program That Brought Results by H. O. Sprinkle, EEI BULLETIN, August, 1942.

4. Experience Points the Way in Accident Prevention by D. C. Stewart, EEI BULLETIN, May, 1943.

5. Charting the Course in Accident Prevention by W. T. Rogers, EEI BULLETIN, February, 1943.

6. Safety Designed into Substations by the Use of Scale Models by J. O. Leslie and D. L. Greene, *Electric Light and Power*, July, 1943.

7. Reducing Accidents by W. F. Nimmo, EEI BULLETIN, July, 1943.

8. Essential Accident Prevention Measures in the Design and Maintenance of Substations by H. S. Fitch, EEI BULLETIN, November, 1943.

REVIEW AND CLASSIFICATION OF 121 FATAL ACCIDENTS REPORTED DURING *1942* WITHIN THE ELECTRIC LIGHT AND POWER INDUSTRY

Edison Electric Institute—Accident Prevention Committee

(This Summary was compiled from detailed reports submitted to the Institute. Coverage is approximately 94% of the 129 fatalities reported to the Institute for their annual statistical report)

ELECTRIC SHOCK OR BURN 66.9%	LINE WORK ON POLES	CONTACTS ESTABLISHED WHILE CLIMBING OR IN WORKING POSITION BUT WITHOUT CUTTING CUT OR LOSING BALANCE	HANDS	Volts - 2300	Lineman	1.Adding 3rd sec.wire. Grasped transf.hanger standing on tel.mess'g'r.Pri. bushing broken.
				2300-4400	Lineman	2.Replacing 1 feeder wire. Lifted wire from cross arm. It had sagged into 2300 wire.
				2300-4000	Lineman	3.Placed live wire on crossarm. Grasped crossarm brace energized through brace bolt.
				2300-4000	Lineman	4.Unwrapping tie wire. Wire went through hole in protector and punctured rubber glove.
				4600	Lineman	5.Believing he had disconnected hot wire climbed to transformer. Hand contacted primary.
				4800	Lineman	6.Climbed pole to connect transf. to service. Grasped primary wire and fell.
				6600	Line Foreman	7.Measuring required length of jumper, bare handed. Touched jumper to 6600 V riser.
				6900-11,000	Serviceman	8.Replacing blown primary fuse. Pulled fuse switch without using stick or gloves.
				6900-11,000	Lineman	9.Replaced defective pin and insulator. Changed position grasped phase wire bare handed.
				7200-12,500	Lineman	10.Removing covering from energized conductor. Protector and rubber glove were cut.
				13,000	Lineman	11.Unscrewing broken insulator. Let go of fall line holding wire clear. Wire fell on thumb.
				13,000	Lineman	12.Unserving tie wire, which contacted crossarm brace bolt. Grasped crossarm brace.
				7630	Lineman	13.Failed to use "hot line" tool to close transf.fuse switch.Canvas gloved hand contacted sw.
				13,200	Lineman	14.One man tying wire with tie stick.Metal head touched crossarm brace grasped by other man.
				66,000	Lineman	15.Climbed wrong structure contacted 66 K.V. jumper. Shocked and fell from pole.
				66,000	Lineman	16.Transferring 66 KV wire "hot" to new pole.Removing blocks over wire. Arced to hand.
			HEAD OR BODY	2300-4150	Lineman	17.Tightening hardware. Shirt zipper contacted live portion of cutout.
				4000-6900	Truck Driver	18.Taking transformer number and painting low side. Head contacted energized cutout.
				6900	Serviceman	19.Removing transformer. Changing position, head contacted energized conductor.
				6900	Lineman	20.Climbing pole.Hook of copper tie wire on D ring entered slot of line hose on live wire.
				6900-11,000	Serviceman	21.Adding 3rd wire to service. Climbed too high and contacted 11,000 volt conductor.
				11,000	Lineman-Groundman	22.Checking size of fuse in cutout. Fastening belt, head contacted bottom of other cutout.
				23,000	Lineman	23.Crawling across tower top. Safety strap caught. Straightened up, contacting phase wire.
			ARMS	2300	Acting Foreman	24.Changing connections of transf.bank. Rt. elbow contacted riser, left hand on ground bus.
				2400	Lineman	25.Transferring and pulling wire up to tension. Contacted grip or wire with elbow.
				2300-4000	Lineman	26.Inspecting and cleaning transformer bushings. Elbow contacted primary connector.
				4000	Lineman	27.Transferring conductors. Hose and blanket slipped from position. Elbow contact.
				2300-4000	Lineman	28.Dead ending wire. While moving his arm displaced line hose establishing contact.
				2300	Lineman	29.Changing crossarms. While tying in line, left arm contacted tie wire.
				2300-4100	Lineman	30.Splicing primary. End of connectors contacted arm above gauntlet of rubber glove.
				6900-12,000	Lineman	31.Transferring conductors. Cutting coil of slack. Arm contacted snatch blocks.
				6900	Lineman	32.Transferring conductors. Attaching wire and disconnect to new crossarm. Made contact.
			FEET	1300-2300	Lineman	33.Disconnecting pothead. Foot contacted pothead terminal. Shock and 40 ft. fall.
		GAFF CUTOUTS LEADING TO SHOCK OR BURNS		112 -230	Lineman	34.Cut out just below secondaries. Hand contacted 230 V secondary. Fell 20 ft. to ground.
				2300	Lineman	35.Preparing to pull slack from primary, climbed pole, cut out and fell into primaries.
				4000	Lineman	36.Removed and was replacing blanket to improve covering. Cut out, fell against pothead.
				7200-12,500	Foreman (working)	37.Preparing to pull up fallen wires. Cut out and fell against 7200 V transf. riser.
		SLIP		12,500	Foreman	38.Descending pole. Slipped on crossarm, fell backward contacting 6900 volt wire.
		MISC. NOT CLASSIFIED ABOVE BECAUSE OF INSUFFICIENT DATA		2300	Lineman-Serviceman	39.Pulling slack secondaries.Climbed to straighten pri. pin.Pole broke throwing him into pri.
				2300	Lineman	40.Removing abandoned st.light wire.Leaned back in belt fastened above pr.arm contacted pri.
				1200-2300	Lineman	41.Inspecting 13.8 KV line above 2300 V.Climbed within 4' of 2300.Shock or cut out. Fell.
				2300	Troubleman	42.While repairing overhead lines contacted conductor and fell from pole.
				2400	Lineman	43.Moving and respacing wires. Contacted wire stub from tap previously cut off.
				2400-4000	Lineman	44.Moving wire from insulator to cross arm sheave. Contacted bare transformer lead.
				4000	Troubleman	45.Installing lightning arresters without protective equipment. Contacted primary.
				4100	Lineman	46.Climbed pole to transf. While fastening safety contacted 4100 V wire. Fell to ground.
				4400	Lineman	47.Standing on pole mounted pri. meter cabinet working on L.A. ground wire. Contacted pri.
				6900	Lineman	48.2 men on pole installing transf. and service.Pole broke. Contacted pri. as the pole fell.
				7650	Lineman	49.Preparing to clamp transf.jumper to line. Believed jumper struck line wire.
				Not stated	Lineman	50.Climbing pole to replace transf. Touched primary and fell to ground.
	LINE WORK BUT STANDING ON SURFACE OF GROUND	ENERGIZED LINE WIRES		2200-4000	Lineman's Helper	51.Stringing 66 KV wire dead with rope. Rope broke,wire fell on 4 KV. Helper picked it up.
				6900-11,000	Foreman	52.Teaching groundman to make 66 KV tie. Tie wire 7' long contacted 11 KV "tied off" wire.
		PRI.BROKEN DOWN TO SEC.		2300-4400	Serviceman	53.Clearing sec. wires burning in trees. Cut sec.at meter. Pri. & sec. bushings broken down.
				4600	Lineman	54.Replacing damaged current transf. Contacted metal meter box alive at primary voltage.
		POLE CONTACT		66,000	Lineman	55.Guiding pole butt. Wire on pole contacted 66 KV.Shocked and thrown on live ry. 3rd. rail.
	LINE WORK AT BUILDING			6900	Groundman	56.On ladder connecting service wires "hot." Service at 6900 V. Wrong transf. connection.
				[illegible]	[illegible]	57.Locating trouble. Entered manhole without clearing sparks, cable broke down. Burned.
		ENERGIZED PRIMS		2300	Lineman	58.Raising transformer level. While standing on transformer contacted 2300 volt bus.
				2200-4200	Electrician's Helper	59.While building temporary wire support lost balance, touched nearby 4200 volt bus.
				6900	Electrician	60.Connecting voltage regulator. Climbed regulator, tripped, fell against live circuit.
				23,000	Electrician	61.Climbed ladder to check disconnect switch positions in compartment. Head contacted bus.

	SURFACE OF GROUND	DOWN TO SEC.	4600	Lineman	54.Replacing damaged current transf. Contacted metal meter box alive at primary voltage.
		POLE CONTACT	66,000	Lineman	55.Guiding pole butt. Vine on pole contacted 66 KV.Shocked and thrown on live ry. 3rd. rail.
	LINE WORK AT BUILDING		6900	Groundman	56.On ladder connecting service wires "hot." Service at 6900 V. Wrong transf. connection.
	[illegible]	[illegible]	[illegible]	[illegible]	57.Locating trouble. Entered manhole without clearing screen. Cable broke down. Burned.
			2300	Lineman	58.Raising transformer level. While standing on transformer contacted 2300 volt bus.
			2200-4200	Electrician's Helper	59.While building temporary wire support lost balance, touched nearby 4200 volt bus.
		ENERGIZED BUSES	6900	Electrician	60.Connecting voltage regulator. Climbed regulator, tripped, fell against live circuit.
			23,000	Electrician	61.Climbed ladder to check disconnect switch positions in compartment. Head contacted bus.
			26,400	Wireman	62.Insulator on bus disconnect failed. Arc traveled across bus structure. Burned.
			33,000	Lineman-Serviceman	63.Cutting in substation. Climbed pole without orders, contacted live bus on pole.
			2300	Lineman	64.Phasing regulator sta. Climbed on regulator believing sta. dead. Contacted lead.
	AT STATIONS WORKING ON OR AROUND EQUIPMENT BUS STRUCTURES ETC.		2300	Lineman	65.Completed making hot tap. Rt. arm touched live wire, left leg on steel framework.
		ENERGIZED LEADS,RISERS AND CABLES	4800	Substation Operator	66.Removing live jumpers from reserve position. Ends shorted causing arc. Burned.
			13,000	Electrician	67.Handling 5' length of bare wire on ladder. It swung and contacted hot riser.
			25,000	Lineman-Foreman	68.Climbed on transf.cooling water pipes to paint water level gauge.Contacted 25,000 V.cable.
			33,000	Lineman	69.Painting steel of substa. Fell from wood plank, contacting vertical transformer leads.
			33,000	Truck Driver	70.Unloading transformer. Truck boom contacted 33 KV. wire while holding transformer.
			2300	Electrician	71.Climbed out of deenergized safe working area. Knee contacted live disconnect.
			11,000	Electrician's Helper	72.Moved ladder from dead to live bus position. Climbed, head contacted disconnect.
		DISCONNECTS	11,000	Substation Attendant	73.Opening gang operated air break sw. to refuse transf. Handle alive, contacted chest.
			13,200	Mechanic	74.Placed ladder without instructions in disconnect position. Climbed and made contact.
			66,000	Lineman	75.Greasing bearing of air break switch supposed dead. Foreman had failed to clear line.
		FUSE	6900	Electrician	76.Working on dead oil switch. Raised up and head contacted live fuse.
		LIGHTNING AR.	33,000	Electrician's Helper	77.Cleaned transf.bushings,deenergized then climbed to clean 33 KV arrester. It was alive.
		COMPENSATOR	1200-2300	Oil Sw. Inspector	78.Energized starting compensator without completely assembling. Arc occurred.
		MAIN SWITCH	Not stated	Pump Operator	79.Pump motor starting switch did not trip. Opened main switch. Flash and burn.
		CRANE CIR.	440	Senior Oiler	80.Painting Turbine Room walls. Contacted overhead 440 volt crane circuit.
		CURR.TRANS.	6300-14,280	Laborer	81.Pointing up concrete cells. Equipment energized without foremen's knowledge.
		SCAFFOLD		Stack Repairman	82.Repairing inside of boiler stack. Rope broke while lowering scaffold. Fell 37 ft.
		COAL CONVEYOR TRESTLE		Stockman's Helper	83.Climbed coal conveyor trestle to look for foreman in yard. Fell 27 ft.
		LOBBY FLOOR OF STATION		Janitor	84.Employe, aged 69, fell on floor injuring previously injured leg. Pneumonia.
	STEAM PLANT	AUTOMATIC ELEVATOR		Engineer	85.Had used elevator. Returned, opened door. Elevator had been moved. Fell 82 ft.
		GLASS SKYLIGHT		Coal Yard Operator	86.On duty at coal conveyor.Left post and climbed on boiler room skylight.It broke, fell 40 ft.
		PLANK PLATFORM		Repairman Helper	87.Tightening bolts steam line flange. Standing on plank.It slipped. He fell with it 21 ft.
FALLS		WALL		Chief Engineer	88.Installing pothead on roof. Walked to job along top of 8" wall cap. Fell 25 ft.
	HYDRO PLANT	WOODEN STEPS		Carpenter	89.Steps to be repaired held by sling from crane. Walked up steps before securing them. Fell.
EXCEPT	LINE	GAFF CUTOUTS		Lineman	90.Climbing pole. At 30 to 35 ft. above ground right hook cut out. Fell to ground.
THOSE	WORK	ON POLES		Lineman	91.Moving from old to new pole. Fell 23 ft. to ground. Possible cut out.
LISTED	ON	LOSS OF GRIP OR		Lineman	92.Climbing pole, lost grip. Spur held in pole causing him to fall head first to sidewalk.
IN OTHER	POLES	BALANCE ON POLES		Lineman	93.Putting safety strap around pole, fell to ground. No evidence of cut out.
CLASSI-	OR	SAFETY SNAP		Lineman	94.Leaning back in strap, fell to ground. Safety found unsnapped from D ring.
FICATIONS	LADDERS	FALLING POLE		Lineman	95.Repairing wire during storm. Tree fell breaking pole. Accident in 1939, death 1942.
		STAIRWAY		Guard	96.No witness. Found on floor at base of stairway leading to 2nd floor balcony.
15.7%	SUB STATION	TRANSFORMER PIT		Wireman	97.Attempting to cross open portion of transformer pit - fell 7 ft. into pit.
		STEEL CABLE BROKE		Lineman	98.Dismantling crane. Man working on one truck. Supporting cable broke. Fell with truck 45 ft.
	METER WORK	EXTENSION LADDER		Meter Installer	99.Fell 5 ft. from extension ladder while installing meter. Broken neck.
	STORE	STAIRWAY		Laborer	100.Turning on light in stairway leading to lavatory in store. Fell down stairway.
				Right-of-Way Man	101.Car skidded on icy highway and collided with large tractor tank truck.
		COLLISION OF VEHICLES		Truck Driver	102.Dump truck struck rear of load of poles, drove one pole thru cab. Crushed head.
				Lineman	103.Crushed between tow truck and line truck which had stalled.Car struck rear of line truck.
MOTOR	HIGHWAY			Meter Reader	104.Using personal motorcycle instead of bus. Collided with farm truck after 68 ft. skid.
VEHICLES		COLLAPSE OF EDGE OF HGWY		Foreman	105.Highway blocked by snowbank. Backed up too near edge, truck rolled from edge.
OPERATION		ON FOOT, THROWN BY CAR		Tester	106.Standing at traffic post. Possible dizzy spell,touched passing car, thrown to street.
OF		THROWN FROM ST.LT.TRUCK		St. Lamp Trimmer	107.Riding on tower, cleaning lamps. Truck stopped.Struck railing which collapsed. Fell.
		THROWN UNDER TRUCK WHEELS		Laborer	108.Tried to get on rear of moving cable pulling truck. Fell or was drawn under wheels.
9.1%	RAILWAY CROSSING	RAILWAY TRAINS		Meterman	109.Driving to inspect meters. Car stopped on railway crossing in path of train.
				Serviceman	110.On service call. Vision partly obscured at railway crossing. Car struck moving engine.
	STEAM PLANT	THROWN FROM TRUCK		Results Engineer	111.Signalling crane operator from back of truck.Driver mistook signal, started truck. Fell.
STRUCK BY		LOAD OF POLES		Laborer	112.Hauled load of 60 ft.poles for line.Unloading,one pole rolled.He fell under it. Crushed.
FALLING,FLY-	LINE WORK			Groundman	113.Loading poles on trailer. Attempted to roll pole, pulled it from trailer. Crushed.
ING,SLIDING-	ON	COLLAPSE OF TRUCK BOOM		Lineman	114.Boom overloaded lifting 3 - 55 ft. poles. Boom collapsed, poles struck workman.
ROLLING OR	GROUND	OVERTURNING OF TRACTOR		Groundman	115.Pulling clearance poles by caterpillar tractor.Pole fell,overturning tractor on workman.
OTHER MOVING		RAILWAY TRAIN		Line Inspector	116.Patrolling 132 KV line on railroad right-of-way. Struck by freight train.
OBJECTS 5.0%	STEAM PLANT	FAILURE OF WINCH ROPE		Coal Handler	117.Standing in doorway. Power winch rope hauling coal cars broke and rope struck him.
BURNED		HOT GRATING		Mechanic	118.Lancing boiler. Intense heat on grating blistered toe. Diabetic gangrene.
	STEAM PLANT	COAL DUST EXPLOSION		Fan Operator	119.Cleaning coal dust from classifier. Explosion and fire burned employe.
2.5%		ASH PIT		Janitor	120.Removing ash from ash pit. Clinkers arched and fell. Burned by flash of flame.
FROZEN 0.8%	LINE WORK	ON LINE PATROL		Meter Reader	121.Emergency patrol of 44 KV line after snow storm. Found frozen near right-of-way.

Compiled for EEI Accident Prevention Committee
By D. C. Stewart, September 1943.

Recent Comment on the Power Supply Situation

Electric Capacity 24% Above Demand

Nation's Supplies of Power, Found Ample for War Work and Civilian Use

By Thomas P. Swift
In New York Times, Nov. 21

AMERICA'S electric power and light industry is one of the few that is having little difficulty in meeting all demands for war production and civilian requirements as well. Since Pearl Harbor there has not been a single instance where a major demand for power by a war industry has not been met, and as our second year of war draws to a close the nation's utilities, both private and public, find themselves in the enviable position of having a 24 per cent reserve capacity.

According to the latest available figures, the peak demand for electric power by all of the nation's consumers aggregated 39,500,000 kw in October. The total installed generating capacity to meet this demand, exclusive of the numerous industrial plants having their own power facilities, totaled 49,000,000 kw, resulting in a "spare" generating capacity of 9,500,000 kw, or 24 per cent of the peak demand. This country's installed power capacity is now well in excess of the generating capacities of the Axis countries combined.

Peak Demand Approaching

In the next three to four weeks, as is customary with the industry, the nation's utilities will reach the point of maximum demand for essential war and civilian kilowatts. For the current month, November, the peak, it is estimated, will run between 40,000,000 and 40,500,000 kw. The December peak demand, or the yearly high record, will be approximately 41,000,000 kw, according to the industry's leading engineers.

By the end of the year, however, an additional 1,000,000 kw of generating capacity are scheduled to be in operation, thus bringing the country's installed capacity contributing to the public supply to an even 50,000,000 kw. This would leave a "spare" capacity of some 9,000,000 kw over peak demand for the month, or about 22 per cent—a comfortable margin when measured against the damaging effects of the last year's bombing raids over Germany and the occupied countries of Europe. The additional 1,000,000 kw of capacity scheduled for operation before the end of the year will come from the completion of numerous power plants, both public and private, throughout the country.

On a kilowatthour output basis, the industry, according to statistics released by the Edison Electric Institute, turned out 4,482,665,000 in the week ended November 13—the official highest thus far on record. For the week ended Nov. 20, preliminary estimates place output at 4,500,000,000 kwhr, or 19 per cent over the same week a year ago. With the high peak of the year expected for the week starting December 12, the industry is anticipating an output of approximately 4,600,000,000 kwhr, or slightly higher, depending on weather conditions.

Distribution of Power

The manufacture of planes, ships, tanks, guns and materials directly related to the war effort currently utilizes about 70 per cent of the nation's industrial power output, which, in turn, accounts for approximately 60 per cent of the total electric sales of the utilities. The remaining 40 per cent is taken by householders, commercial establishments and miscellaneous users, such as street traction properties and municipal street lighting.

One of the largest consumers of electric power in the nation is the electrometallurgical industry. It is estimated that this industry will have used some 35,000,000,000 kwhr this year, contrasted with only 10,000,000,000 kwhr in 1940. The aluminum, magnesium, electric steel and alloy manufacturers, going full blast on war orders, constitute the largest individual class of power users in the country.

While frequently in the last five years Federal power officials have predicted that power shortages were in the offing, nothing has happened to date to bear out such forebodings. The current power conservation program is in no way related to a shortage of power-generating facilities.

In formulating the recent "brownout," or conservation program, J. A. Krug, head of the Government's Office of War Utilities, said reassuringly:

"In the electric utility industry the installed generating capacity, together with capacity now under construction, is ample to meet all foreseeable electric needs. It is essential, however, to save the use of elctricity wherever possible so as to reduce directly or indirectly the demands for materials, fuel, transportation and manpower."

Phooey!

An editorial in *Snap Shots*, employee magazine of Georgia Power Company

PHOOEY on all this talk about the government power plants being the life-savers of America's war production. There's been plenty of this kind of talk since the war began. It comes from propagandists who want to defend the policies which led to the construction of the existing plants—so that they can get MORE government plants built after the war, and even during the war. Such statements have been printed frequently in innocent newspapers and other publications which have been taken in by the plausible public power promoters.

The basic error in all such propaganda is that 85 per cent of America's power supply is produced by the private electric companies and only 15 per cent by government-owned plants of all kinds.

Yet, to hear the propagandists, you'd think it was the 15 per cent that had saved the nation.

Now we can readily admit that the government plants in certain areas are producing large chunks of power which are going into essential war production. Up in Tennessee, to cite a familiar example, very large amounts of TVA power are being used to produce aluminum. They certainly couldn't get along without this power unless somebody else could supply it.

Now that's the point—unless somebody else could supply it.

There is no shortage of power for war

(*Continued on page* 373)

Effective Tie-In of Employees and Customer Relations Programs

By Geo. M. Carnes

Acting Director, Advertising & Personnel Department,
New Orleans Public Service Inc.

Presented before Employee Activities Committee Meeting, Southeastern Electric Exchange, Atlanta, Ga., Nov. 5, 1943

A FUNDAMENTAL concept in our company's program is that good customer relations begin with good employee relations. Digressing for a moment, in this talk, the terms, "Public Relations" and "Customer Relations," will be used interchangeably; for, since we furnish electricity, gas and mass transportation to the City of New Orleans, practically every member of the public is a customer of one or more of our services. It is our belief that if there is any secret to success in building good public relations, it is that you must begin at home and work from the inside out.

To outsiders, those who work for the company are the company. It is they who make the company's reputation. As citizens of the community which we serve, they are the ablest spokesmen for our policies and practices. With good relations inside the company, the foundation for good outside relations is firmly established. But neither good employee nor good customer relations can be taken for granted.

Of course, the first and most essential step in any Employee Relations Program is to establish good working conditions and sound over-all personnel policies. But merely living right is not enough. People must know you live right. And the best way we can think of to have the people of this community know that we live right is for our employees to be convinced that we do; and, convinced as well, that it is to their advantage to let the public know that we do.

The employee today wants to feel he is treated fairly; that he is recognized as an individual who contributes to the success of the organization of which he is a part, and, therefore, is entitled to know how the business is getting along. This in itself is sufficient reason for establishing a program which seeks to explain the whys and wherefores of company policies to employees. But it is by no means the only reason. A well trained, well informed personnel is the key to good public relations. From this standpoint, our Employee Relations Program has three major objectives:

1. To sell the employee on the company and his job with the company. If an employee thinks highly of his company, he will invariably reflect that impression on the outside.

2. To develop the proper attitude on the part of our employees toward the public. If an employee has been adequately trained in the proper methods of handling customer contacts—if he realizes the personal advantage of being cheerful and courteous, his attitude toward the public is bound to reflect the results of his training.

3. To furnish our employees with information about our company that they, in turn, can impart to the public. Employees well versed in company policies and operations are much more inclined to talk about the company to friends and acquaintances and thus clear up many existing doubts and misunderstandings.

Recently we examined all material published to date as part of our Employee Information Program and found that, with few exceptions, all of it had been prepared with one or more of these three purposes in view. Our Program, in other words, is based upon the conviction that the impressions which our people make upon the public result from their attitude toward the company, from their attitude toward the customer, and from their knowledge of company policies and operations.

Our Employee Information Program is the basic activity for supplying members of the company with information which they can in turn give to the public. At its inception, all employees were invited to ask questions about company operations and policies; and, after these had been collected and analyzed, certain subjects were indicated to be of enough general interest to warrant issuing a series of booklets.

Meetings to discuss these booklets have been held by groups under the direction of each department in accordance with their own schedules, the Advertising and Personnel Department acting only to coordinate and assist. As meetings were held on these and other subjects of general information, questions arose which were rerouted through our department to those in the company properly qualified to answer them. The answers were, in turn, sent back for reading and discussion at subsequent meetings. Every conference leader, as well as other key members of the company, have been furnished special binders in which are kept answers to all questions asked in these meetings. This routine has been continued as a means not only of supplying employees with the information they want, but also as a source of information from which we get many suggestions which guide us in the preparation of other material for company-wide distribution.

Our earliest booklets were general in nature and attempted to lay the groundwork for more specific information in the future. They tried to do a selling job by pointing out the important role of our company in the local community, emphasizing our high ideals in regard to rendering efficient service, stressing the importance of each individual employee in the accomplishment of over-all company objectives, and enumerating the various benefits of employment with New Orleans Public Service. These booklets in the main sought to develop a pride in the company among our employees as well as to point out to them tangible benefits of their jobs with the company; but they also contained certain specific information which employees could impart to the public. Subsequent booklets have described in detail each of our three services—electricity, gas and transportation—paying particu-

lar attention to those things with which our customers are especially concerned.

Besides the use of booklets, we found that we could produce sound-slide films, at quite reasonable cost, that fit extremely well into our program. In the early part of 1942, it became apparent that a sharp and continuing increase in bus and street car passengers would soon create a transportation problem of no small proportion unless certain steps were taken. We thought it important that the public should understand the nature of this problem and how we proposed to meet it. We also needed the public's cooperation if staggered hours, selective stops, and other such necessary measures were to succeed. As one way of getting the story to the public, we produced and showed a 25-minute sound-slide film to all of our employees in regularly scheduled Employee Information meetings. This film, called "Let's Get To Work," emphasized those aspects of the local wartime transportation problem with which we wanted the people of New Orleans to be familiar. The film was well received and was given limited additional use before certain civic groups.

Encouraged by the success of this new medium, we have also developed films (25 to 30 minutes in length) on our gas operations, on the importance of conservation and salvage, on proper methods of working safely, and a film which is shown to all new employees at the time of their employment entitled, "Things You Will Want to Know About Public Service." This film, as well as a booklet of the same name, which is given to all new employees, seeks in a broad manner to accomplish each of our three public relations objectives.

Realizing the usefulness of the company's annual report in conveying significant information, a modified version, patterned for employee readership, has been published for the past two years. This report contains considerable information which we would like our customers to know, since it summarizes the year's activities and tells of the disposition of the year's total revenue. In addition, the report attempts to build up the employee's pride in both his company and his own particular job. Praise is freely given to all employees for the accomplishment of their departments; special mention is made of those with outstanding records of safety, of years of continuous service, etc.; recognition is given all members of the company for their support of civic and patriotic endeavors; tribute is paid to fellow-employees in the armed forces of our country; and considerable emphasis is placed on the vital role of our company in our nation's war effort. Thus it may be said that the annual report is both informative and inspirational and, consequently, meets two of the objectives under consideration.

Since the beginning of our country's defense program, we have continually stressed the fact that the utility industry is classified as essential to the war effort, and have tried to make our employees realize that the company, through their individual efforts, is making a sizable contribution to the defeat of our enemies. Besides the use of booklets and films for this purpose, we have, since the beginning of the year, mailed several special folders to the homes of all our employees in which we have frankly discussed specific wartime problems facing the company and its employees. We have recently inclined quite strongly toward the use of the mails to distribute informational material to our people, since, in many instances by use of this method, we can also reach the families of our employees.

One of the most serious concerns in employee-management relationship today is that of payroll deductions, a matter which can cause considerable resentment, if not properly understood. When the Withholding Tax became effective, a special mailing piece was prepared in which we attempted to explain the new tax, and to make it clear that the company acts merely as an agent of the government in withholding a definitely prescribed amount of each employee's earnings. In connection with the recent United Community and War Chest Campaign, we again used a mailing piece for the dual purpose of voicing an appeal for a worthy cause, and at the same time trying to eliminate any feeling on the part of our employees that they are being "pressured" into contributing beyond their individual desires to do so. Realizing the continually increasing importance that payroll deductions have in influencing an employee's attitude toward his company, it is possible that, at some future date, we will see fit to prepare, in printed form, for distribution to all our employees, an explanation of just what they are getting in return for the various deductions made from their paychecks.

Obviously the job of selling our employees on the fact that they are working for a good company is not as easy today as it was a few years ago. We cannot claim, as we formerly did, that we pay the prevailing scale of wages or better for similar work carried on in our operating area, since few private businesses can compete with the wages paid by war industries with huge government contracts. We believe, however, that we still offer important advantages to our personnel which are not duplicated by war plants. Most important among these is stability and security of employment. Shortly after the inception of the National Defense Program, we published a booklet entitled, "The Value of our Jobs with Public Service," in which we particularly stressed the advantages of job stability and security. The material included in this booklet was recently revised in the light of wartime conditions, and incorporated into a booklet entitled "What's Your Job With Public Service Worth?" which, in addition to being given to all present employees, is now given to each new employee as part of our induction procedure. As a means of maintaining good public relations, we believe it highly important today to repeatedly sell our employees on the benefits of employment with our company.

With respect to the various booklets describing company operations, we, of course, have found ourselves talking to a parade rather than an audience. We have naturally experienced the same abnormal turnover in personnel as have other businesses; and have found it no longer practical to give every new employee a copy of each booklet previously issued.

In order to bring new employees up to date, we are preparing two summary booklets, the first of which, describing company operations, will be given to new employees when they have been with us for thirty days; the second, devoted to customer service and customer relations, to be distributed at the end of sixty days' employment.

Since, as I stated at the outset, this would be a paper dealing with what we are doing and why, it seems appropriate to give you our thinking on house organs. We do not publish a house organ—a fact which, we admit, has certain drawbacks in an Employee Relations Program. We have felt, on the other hand, that anything short of an exceptionally good house organ likewise has drawbacks. And, since we frankly concede that we are not prepared at this time to publish an exceptionally good house or-

gan, we have preferred to rely on special mailing pieces designed to do a particular job when and as needed.

Future plans of our Employee Information Program contemplate considerable emphasis on supplementary information prepared for discussion meetings among supervisory personnel. It is to the supervisor that the rank-and-file employee looks for information about company operations and about policies affecting both employees and customers. The supervisor, moreover, has the responsibility of instilling in his particular group a realization of the value and methods of promoting good customer relations. He, furthermore, must continually keep his people sold on the company, at the same time bringing to the attention of management the indications that he finds, among those under his supervision, that certain revisions of policy might well be in order.

Special memoranda to supervisory personnel have accompanied the last two booklets issued, with supervisors receiving personal copies of these booklets a few days before the remaining members of the company. We have recently prepared material for a series of three supervisory personnel conferences; and perhaps the titles of the subjects covered would be of interest to you. They are:

1. The Importance of the Position of the Supervisor.

2. Review of the Company's History, Operating Practices and Problems.

3. The Value of Good Public Relations.

In discussing the value of good public relations with our supervisors, we attempt to show what each individual employee gains through favorable customer opinion, stressing particularly that our continued existence as a private business may well depend upon what people think of us. Important, too, for our supervisors to realize are the advantages of private ownership to employees as well as to the public. Courteous treatment, also, is a part of this same story; for the way we treat customers today, when we are not promoting use of our services, will have a definite bearing upon our post-war future. Emphasis will be placed throughout these meetings on the importance of the supervisor in the over-all picture—this information being given to him so that, by being better informed on company matters than the members of his group, he may be able to answer their questions and clear up their misunderstandings.

Future plans contemplate use of bulletin board posters to stress courtesy to customers, proper use of the telephone, personal appearance, and other matters affecting the relations between employees and the public. We believe this can be done effectively by a single dominant illustration, sometimes in the nature of a caricature, accompanied by a brief message.

Our Employee Information Program is essentially company-wide in its scope. We have, however, upon request, assisted various departments of the company in meeting certain specific training problems having a bearing upon our relations with the public, although this program, in general, covers the subject of customer relations only in its broadest aspects. Employees, such as transportation operators, service men, meter readers, sales representatives, cashiers, application clerks, etc., who have constant, direct contacts with customers are continually trained in the proper methods of handling these contacts through special departmental training programs. Besides our General Induction Procedure, each department also has its own program for familiarizing new employees with things which they should know.

These are for the most part the things which our company does to sell employees on their company and their jobs; to develop the proper attitude on the part of employees toward the public; and to furnish employees with information that they can pass on to the public. If our people have a pride in their company, treat our customers with the courtesy and respect that is due them, and are well informed, we believe that we have established a firm basis for good relations with the public we serve. For we are firmly convinced that good public relations finds its strongest roots in the fertile soil of good employee relations. Of course, we try never to lose sight of the fact that, as an instrument of good will, no employee program can be any stronger than the over-all industrial relations policy of which it is a part. It may be lot poorer, but it can't rise above the fundamental character of the company itself.

Phooey!

(*Continued from page* 370)

production or any other purpose anywhere in the United States. There is no shortage of power in any section served by private companies, far removed from the government plants. Take Detroit, for instance. If you had to name the one single area of war production most important to the nation, you would probably pick out Detroit. The great manufacturing plants around Detroit manage to worry along without benefit of government electric power; if they have any production problems—electric power is not one of them. Take the great industrial center of Buffalo; the steel centers of Pittsburgh, Wheeling, Youngstown, and others; the aircraft plants and machine shops of New England; the shipyards along the Atlantic coast; Philadelphia, Baltimore, Wilmington, New York, Chicago. These are but a few war production centers from a very long list of cities and areas that could be enumerated.

In every one, the private electric companies are providing all of the central station service and doing all right at it.

In certain areas, government power is essential to the war plants. But—what makes anybody think the private electric industry, if it had been allowed to continue in business in those areas, would have failed to meet its obligation? It has not failed in other sections, comprising most of the nation, where government power is not available. Rather, the promptness with which it has met all of the enormous requirements of the war plants has been one of the brightest episodes in the whole war program. Also—in the limited areas where government plants have taken over the load, it was not because the private companies had failed to supply enough power. Is there any reason to think they would not have continued to meet the demand for power if they had been let alone? None whatever.

Right here in Georgia we have the Bell bomber plant, one of the two or three largest aircraft assembly plants in the whole United States—a plant and an industry of almost incredible size. According to *Time* magazine, one of the three reasons which influenced the Army engineers to locate the plant here was the adequacy of our electric power.

Stripped of all the bunk—the statement can be made that the public power plants are producing between one-sixth and one-seventh of the total power supply. And private companies would have supplied that if the government plants hadn't been built.

Chemists Vital in Power Station Operation

By W. A. Lower

Chemical Laboratory Supervisor, Duquesne Light Company

Reprinted from *Public Service*, employee magazine of Philadelphia Company and subsidiary companies

UNFLATTERING as it may seem, I have been asked the question—"Why does the Light Company need a chemist?"—dozens of times, when people first learned that I was a chemist and employed by the Duquesne Light Company. In an industry trade-marked by lamp bulbs and motors, transmission lines and transformers, the idea of a chemist with his test tubes and brightly colored solutions seems preposterous.

All of these mechanisms with which power companies are so normally associated are for only the distribution and use of electricity. To make it, there must be an unending flow of coal, water, and oil, and it is with these materials that the chemist is primarily concerned. Continuity of operation and efficient performance depend as much on their careful selection and proper conditioning as the maintenance of an adequate supply. Furthermore, the service life of equipment may be determined largely by the kind and quality of the metal used in its making. These materials are so significant in power generation that the Duquesne Light Company has twenty-two employees whose full time is given to their analysis and control. Trained personnel, assigned to each of the several power stations, make the necessary tests for regulating day-to-day performance. Final control is exercised from the central laboratory in Manchester, where pertinent problems are constantly being investigated by technically trained chemists, chemical engineers, metallurgists and a bacteriologist.

Raw Materials for Electricity

For every kilowatt-hour of electricity that is made, approximately one pound of coal must be burned, ten pounds of steam worked to exhaustion, and roughly a hundred gallons of water detoured from the river into the power plant and out again. In terms of the total electrical needs of the Pittsburgh district, the coal burned in a year would fill a train reaching from Pittsburgh to Philadelphia, and the total water diverted to the several stations would equal approximately one-half the normal summer-time flow of the Allegheny River at the Point.

Coal and water are the raw materials for electricity. The coal is burned in boilers under forced draft where as much as twenty tons an hour are consumed at white heat in a single furnace. The steam, at temperatures up to 950° Fahrenheit, enters what resembles a giant windmill, called a turbine, with such velocity that once inside it foments a hurricane far worse than any Nature ever produced, and turns the generator at speeds such that, if released, it would roll from New York to San Francisco in four hours. While it takes less than a second for the steam to pass through the twenty-some blade-wheels of this flying windmill, it comes out a completely spent vapor, fit only to be condensed and returned to the boiler to repeat its labors. Exhausting into a closed shell, the vapors are quickly reduced to the liquid state on the cold surfaces of some 10,000 small copper alloy tubes through which huge floods of river water are constantly circulated.

Getting Your Money's Worth

Coal has become the principal fuel in the generation of electrical power because of its abundance and low cost. Composed of combustible matter, ash and water, its quality is determined by the relative amounts of the three constituents. In general, high heating value is associated with low ash and vice versa. The domestic consumer, unable to measure quality except by the amount of ashes he must carry from the basement, thinks largely of how much it costs to heat his house. The power plant operator is no different. More heating value per pound of fuel means lower costs in generating electricity, and, when burning as much as 6000 tons in a day, he wants to squeeze out the very last bit of the heat. He needs to know how much heat there is in his coal and how much he gets out, and here the chemist enters the picture. Only an analysis of the coal, boiler refuse and stack gases, will answer his questions. With these data he has both a measure of energy input and combustible loss in the determination and control of plant efficiency, and a basis for contract purchase specifications.

To get the most out of his fuel, the operator must know also how well it will burn. Both the design and operation of his boiler are determined in part by the type of coal to be used. Although the amount may vary markedly, normally a third of it is volatile matter which vaporizes as soon as the coal gets hot. Loss of these constituents, like that indicated by the black soot so often observed on the snow in residential districts, cannot be tolerated. Furthermore, the ash may render a coal unfit for service in spite of the fact that the actual amount present may be very low. Quite often its melting point is such that at the high furnace temperatures (approximately 2200° Fahrenheit), it fuses and forms huge clinkers that entrap considerable amounts of unburned fuel and seriously complicate ash handling problems. Finally, the size of the coal is also significant. If disregarded, improperly sized particles may be blown from the fuel bed or furnace while still a sticky mass of unburned fuel and adhere to either the sidewall or steam generating tubes, where they form slag deposits. Such formations greatly retard heat transfer through the tube walls and, in severe cases, seriously obstruct the gas passages.

To get his full money's worth out of the coal, the power plant operator must know all its characteristics, and these can be determined only by laboratory tests. Without this information, he is totally in the dark about what he gets or what it will do; with it, he can choose what he buys and operate his boilers to obtain the most from what he has.

The first step in the analysis of coal is sampling. The amount used in the laboratory for each determination is approximately one thimbleful. Compared to the whole mass from which it was taken, this small amount is like a cupful of water from a fair-sized swimming pool, yet it must be fully representative of all the coal. With a material whose many pieces don't even look alike, this is not easy. In our stations it is accom-

plished by automatic equipment which grabs small portions of the coal at frequent intervals from the conveyor belt on which it enters the station, grinds, mixes and divides it until only a quart remains. Further crushing, mixing and dividing in a scientific manner in the laboratory provides the small portion for analysis. Its particle size is such that all of it will pass through a sieve having 3600 openings to the square inch.

With this sample the heating value, the percentage of moisture, volatile matter, sulfur and ash are accurately established. Other properties like coal particles size and grindability or ash fusion temperature are determined on special samples from time to time as needed.

Water for Steam Power Plants

Aside from the small amounts used for sanitary services, the water for steam power plants is needed for cooling purposes and the generation of steam. The quantities required are so great that an adequate supply largely determines plant location. In spite of its abundance, the characteristics of water from all natural sources—in our case, the Allegheny and Ohio Rivers—are such, however, that none of it is completely satisfactory for use. It is heavily polluted with both dissolved and suspended solids, and usually contains millions of living plants and animals of microscopic size, known as bacteria.

To make this water fit for drinking and sanitary use, it must be chemically treated and filtered to remove the suspended solids and chlorinated to kill the disease-producing germs. In all of our stations it is also softened to remove those hardness constituents—calcium and magnesium—that make the well-known ring on the bathtub. Besides the daily analyses made by the chemist in regulating the amount of treatment and the chlorine dosage, samples of the water are subjected also to bacteriological tests to assure its fitness for use.

When employed for cooling purposes, water containing all these solid contaminants and bacterial organisms, if untreated, will form deposits on the heat transfer surfaces and materially decrease the efficiency of the equipment; furthermore, it is corrosive. Since the amount of water used for cooling is extremely large—many times that for all other purposes combined—filtration and involved chemical treatment are not feasible. In our plants, therefore, we use corrosion-resistant copper alloys in fabricating the condensing equipment, and simply add chlorine to the water to "kill the bugs." The deposits otherwise experienced are due largely to the bacteria which attach themselves to the metal surfaces, multiply rapidly in the warm environment, and thus form a slimy mass that ensnares the suspended solids carried in the water. By regulating this treatment with strict chemical control tests, costly tube cleanings are avoided and savings of many thousands of dollars a year are effected. More involved treatment is employed in only those few cases where the demands are limited and operating conditions necessitate a purer water.

Saving the Boiler Metal

If the river water with all its solid matter were admitted to a boiler, evaporation at rates sometimes as great as 500,000 pounds an hour would quickly convert it to a thick, muddy fluid and deposit scale on the tube surfaces. This scale, much like the familiar incrustations in a tea kettle, produces enormous heat losses when only of paper thickness, and, when somewhat thicker, causes the tube to overheat, lose strength and fail.

Twenty years ago scale was accepted as a necessary evil, and every few weeks the boiler was taken out of service and cleaned mechanically. Today that is no longer necessary. The chemist treats the water before it enters the boiler, and then further treats it when inside so that the boiler runs year in and year out and remains clean. Without such control, the high pressure, high capacity units like those at the Phillips Power Station would not have been possible.

With all of its costliness and inconvenience, scale, however, has been the lesser of two evils. When oxygen from the air or acid chemicals enter the boiler, the metal is quickly corroded, the action taking place at a much faster rate at the elevated temperatures than the rusting with which we are normally familiar. While some of the corrosion is general throughout the boiler, much of it is localized, causing pits, which eventually make holes in the tube walls, and the failure of just one tube renders the whole boiler useless until repaired. The corrective measures tried have been many, including a costly procedure for painting all water-wetted surfaces of the boiler. Eventual control was found in the maintenance of definite chemical conditions in the boiler water at all times.

With water that varies as much and as fast as that from the river, constant vigilance is required to assure the proper chemical control. The chemists assigned to the various stations must make careful analyses at least once each day before prescribing the amount of chemicals to be used in clarifying and softening the water and then check it after treatment; evaporator performance is dependent on the maintenance of prescribed chemical conditions; and to assure the elimination of oxygen from boiler feed water numerous samples from the complicated condensate system are analyzed daily. To regulate his boiler water quality, the chemist must know all the symptoms of his patient and prescribe accordingly, and then further diagnose the case to make sure his treatment was correct.

Floating Power

Next in importance to coal and water in the mind of the power plant operator is oil. With moving machinery parts that slide past each other at speeds up to 150 miles an hour, only excellent lubrication can prevent a premature death for the equipment. With the progressively heavier loads, greater speeds and higher temperatures, lubrication has become an art since man first smeared animal fat—the only grease he had—on the hubs of his wagon wheels.

To prevent friction every bearing surface must be separated from its counterpart by a distinct and unbroken film of oil that actually carries the load. If the oil is too thin, it is squeezed out; if it is too heavy, it won't flow. As a result there is now a specific lubricant for every combination of load, speed and temperature. The type to be used is normally prescribed by the machine designer, but seeing that it conforms to specifications is a major duty of the chemist.

Once in service it is immediately exposed to a host of conditions that tend to impair its quality. It is inevitable that eventually it becomes contaminated with water and dust particles. Being an unstable material, it is readily oxidized, particularly at higher temperatures, with the resultant formation of acid constituents. Collectively, these contaminents diminish its value as a lubricant, scratch the bearing surfaces, corrode the bearings, governor parts, piping, etc., and in general foul the system. While chemicals can now be added which inhibit the tendency to oxidize and provide the oil with added capacity for preventing corrosion when water is present, frequent tests must be made in the laboratory to

determine the viscosity, water, and sediment content, acidity, water retention characteristics, rust-preventing quality, and a host of other properties pertinent to its use. On the basis of such data, light oil like that in a turbine, where a single system may require as much as 2700 gallons, is often reconditioned to remove the water, sediment, and some of the acid constituents.

Quenching the Arc

Power plant uses of oil are not by any means limited to lubrication, however. Because of its excellent insulating properties, it serves as the cooling fluid in the many transformers which operate at potentials up to 66,000 volts; in the high voltage switches, known as circuit breakers, it quenches the arc which inevitably develops when currents of such magnitude are interrupted.

In these applications the oil property of primary interest is the dielectric value-resistance to the flow of electric currents. Obviously this resistance must always appreciably exceed that necessary to withstand any voltage to which the equipment might be subjected. Contrary to common notion, oil and water do mix —to a degree—and water is sometimes a good conductor. The oil must be dry, therefore, and conditioned in manner such that its capacity to absorb moisture is reduced to a minimum. Like turbine oil, that for dielectric purposes is also easily oxidized. Since the oxidation products increase the water retention characteristics and, in advanced stages, form sludge deposits which interfere with efficient cooling, stability is most important. In addition the oil must have excellent flow properties over a wide range of temperatures since much of this equipment is exposed to the weather.

To assure high standards of quality, detailed laboratory tests are made on every shipment of new oil, and all that in some 1400 transformers is subjected to careful analysis at fixed intervals. When test data indicate that the oil is no longer fit for service, it is reconditioned. With the control provided by the laboratory, its quality is improved sufficiently that it approximates that of new oil. In the four years that current reconditioning methods have been used, some 250,000 gallons have been reclaimed.

Metals for Power Plants

Selecting equipment for power plants is somewhat like buying shoes for a boy —both must be able to take it. In addition to resisting the stresses developed, much of it must withstand the wear and tear of abrasive materials or corrosive fluids. The choice of metals is further complicated by the high speeds and extreme temperatures.

Besides having the right composition, the metal must be properly conditioned also. Strength, hardness, elasticity and many of its other properties are largely determined by the heat treatment when it was rolled or cast.

Finding the proper material is largely a matter of knowing the cause for failures. From detailed metallurgical studies made in our laboratories of the various copper alloys used in condensers, there are available to the construction engineers and operators complete histories of the tubes used in each unit. On the basis of these data, all tube purchases are now made on rigid specifications relative to composition, size and quality and the tubes are inspected by our own metallurgists prior to shipment. Similar case histories have been prepared for turbine blades from which probable service life can be predicted. At every turbine overhaul outage each blade is inspected individually for cracks since one broken blade in the windmill can wreck many others and cause damage worth many thousands of dollars. Boiler tubes, bearing metal, etc., are all carefully selected according to well defined metallurgical specifications.

When equipment failures are experienced, the cause can frequently be determined only by metallurgical examination. Many times the metal is not at fault; sometimes the design was bad, the construction work faulty, or the operating practices not the best. Helping to distinguish between these possible causes is probably the basic function of our metallurgists.

Another very significent phase of his work is welding. Arc welding is used more and more in both the initial installation and renewal of power plant piping and equipment. In many cases the welded joints are subject to both high pressures and temperatures, hence they must be of good quality. To maintain high standards of workmanship, samples prepared by each of the Power Stations Department welders are tested annually in the laboratory and new types of welding rods, fluxes and methods of use are frequently investigated.

* * * *

"Why does the Light Company need a chemist?" For this oft-repeated question my answers are usually pretty much as given here. Time and space forbid more than mention of steam quality, paints, cleaning compounds and methods, solvents, ash and gas analysis, and a host of other problems, all of which are under continual investigation. Not only is the problem studied, it is recorded. From our well-equipped photographic dark room come pictures that vary from the greatly reduced image of a giant turbine to the highly magnified—1000 times—grain structure of a piece of metal.

As in most industries today, the chemist has played an important role in the development of better bethods for generating electricity. He has helped make it a safer industry; he has aided in lowering costs; and, last but not least, his efforts have resulted in fewer service interruptions. Truly, here again we have "Better Living Through Chemistry."

NEW PUBLICATIONS

CABLE OPERATION, 1941

EEI Pub K-6. A report of the Committee on Power Distribution, Association of Edison Illuminating Companies and the Transmission and Distribution Committee, Edison Electric Institute. 22 pages. Price 60¢ to members and their employees; $1.50 to nonmembers in U.S.A.; $1.65 to foreign countries.

CONTINUING the policy initiated with the report published last year, the present report combines the essential features of the cable operation studies previously carried on separately by the Association of Edison Illuminating Companies and Edison Electric Institute Committees. The number of contributors this year (17) is one less than that reported last year.

For the third consecutive year the total cable trouble rate for paper-insulated, duct lay cable has been constant at 6.9. There was an increase in the failure rate from 4.7 to 5.1, which was offset in the total trouble rate by a decrease in the removal rate.

No outstanding change in the joint trouble or component rates occurred during 1941.

The total trouble rate for potheads decreased from 3.1 to 2.9, continuing the downward trend of the past four years. The failure rate of 0.9 is the lowest of the past seven years.

TURBINES, CONDENSERS, FEED-WATER HEATERS, 1942

EEI Pub K-7. A report of the Prime Movers Committee, Edison Electric Institute. 9 pages. Price 25¢ to member companies and their employees; 65¢ to non-member companies in U.S.A.; 75¢ to foreign countries.

Financial and Operating Statistics of REA

THE following statistics have been derived from the recent annual report of the Rural Electrification Administration: "Allotment, Construction, Operating and Financial Statistics of REA-Financed Systems—December 31, 1942. Table I shows total for United States according to page VII of the report.

The report does not show charges for depreciation, but, if depreciation is taken at the rate set by the TVA for its distribution lines, (3.91 per cent) the accrued depreciation during 1942 is $13,685,000, which leaves the undertaking in the red by $2,212,000. On a total fixed capital of $350,000,000, the interest charges of $8,784,262 constitute only 2.51 per cent, which is but little more than the cost of money to the U. S. Treasury and compares with the 3.9 per cent required for interest and principal repayments under the original 20 year amortization plan.

Note also the charges for "insurance, taxes and miscellaneous" are only 5 per cent of revenues, compared with more than 25 per cent for private companies. If this latter figure were used, the REA systems would have paid in taxes and insurance about $12,000,000 in place of the $2,336,438 shown on the above income statement. It might, however, be pointed out that the great majority of REA systems would have shown continued deficits if proper charges for depreciation had been made and so would not be liable for Federal income or excess profits taxes.

At the end of 1942 the fixed capital of the REA systems in operation was $364,324,196. This averages about $964 per mile of line and compares with a similar figure of $900 for 1941. If the revenue per mile is $128.50, as is shown by Table II, it would indicate a turnover of capital only once in 7½ years, which is insufficient to maintain an adequate amount for depreciation after operating expenses have been provided for. This is emphasized by the ratio figures which indicate only 2.68 customers per mile.

TABLE I.—INCOME STATEMENT—ALL REA FINANCED SYSTEMS—CALENDAR YEAR 1942

Gross Revenues		$46,927,322
Operating Expenses		
Power Purchased	$11,787,629	
Operating Payroll	7,062,530* (note)	
General Expenses	5,684,122	
Insurance, Taxes, Miscellaneous	2,336,438	26,870,719
Operating Income		$20,056,603
Non-operating Income, net		201,078
"Net Revenue Before Depreciation"		$20,257,681
Interest		
Due and Payable	$ 6,580,520	
Accumulated but not due	2,203,742	8,784,262
Net Income Before Depreciation		$11,473,419

* This applies to operating enterprises only and does not include the administrative expenses of the REA itself, which were $3,462,875 for the fiscal year ending June 30, 1942. (U. S. Budget for 1944, page A48.)
Note: The REA shows "funds advanced" at the end of 1942 as $364,324,196. The average for the year would be about $350,000,000.

Comparison with Private Lines

Statistical Bulletin No. 10 of the Edison Electric Institute gives the total sales and revenues for all farms east of the 100 Meridian, which is done so that the effect of low-cost, high-usage irrigation pumping will not distort the picture of farm electrification. The averages are shown in Table III in comparison with comparable figures for the REA from Table II. The EEI totals (which include REA) imply a higher use of electricity at lower rates where the farms are served by private companies.

Table IV shows the REA operating statistics for each individual state.—WMC.

TABLE II.—STATISTICS OF THE RURAL ELECTRIFICATION ADMINISTRATION, CALENDAR YEAR 1942
ALL REA-FINANCED POWER SYSTEMS (INCLUDING TVA AND PRIVATE COMPANIES)

Energized Systems

Date	Miles	No. Consumers	Per Mile
June 1936	400	693	1.73
June 1937	8,000	19,611	2.45
June 1938	41,736	104,528	2.50
December 1938	75,914	.....	.....
June 1939	115,230	268,000	2.33
December 1939	174,616	.....	.....
June 1940	232,978	549,604	2.36
December 1940	265,633	.....	.....
June 1941	307,769	779,561	2.53
December 1941	348,062	902,266	2.59
June 1942	369,129	981,193	2.65
December 1942	378,015	1,012,284	2.68

Consumption of Electricity

Calendar Year	Avg. Miles of Line	Avg. No. of Consumers	Kwhr. Sold	Per Consumer	Revenues	Per Kwhr
1938*	47,250	117,000	.....	.....	.....	....
1939*	122,000	287,000	.....	.....	.....	....
1940**	225,000	550,000	435,000,000	790	23,500,000	5.40¢
1941	307,000	780,000	724,384,550	929	35,022,071	4.83
1942	365,000	965,000	1,150,536,000	1,192	46,927,000	4.08

* Interpolated from table above.
** Approximate figures; interpolated from report for Year Ending Dec. 31, 1941.

Average Ratios for Recent Years

Calendar Year	Customers per mile	Kwhr per mile	Revenue per cust'r	Revenue per mile
1940	2.45	1,930	$42.70	$104.50
1941	2.54	2,360	44.90	114.00
1942	2.64	3,152	48.63	128.50

TABLE III.—SALES AND REVENUES—FARM SERVICE 1942

All Farms East of 100 Meridian			*All R.E.A. Lines*		
Kwhr per Customer	Average Annual Bill	Revenue per Kwhr	Kwhr per Customer	Average Annual Bill	Revenue per Kwhr
1,239	$48.07	3.88¢	1,192	$48.63	4.08¢

Table IV. Operating Statistics of R.E.A. Systems, 1942

Derived from reports of the Rural Electrification Administration

	Dec 31, 1942			Year 1942				
	Customers							
	Miles Line	Number	Per Mile	KWH Billed	Avg. No. Customers	KWHR Year	Gross Revenues	Avg. per KWHR
U S (a)	377,823	1,012,284	2.68	1,060,181,995	957,275	1,108	$46,401,597	4.38¢
Alabama	9,875	31,549	3.2	32,088,582	28,945	1,109	1,140,555	3.55
Arizona	620	1,248	2.0	3,447,955	1,188	2,900*	112,809	3.27
Arkansas	9,013	24,366	2.7	13,734,968	21,496	639	865,827	6.30
California	1,464	4,186	2.9	6,870,309	4,002	1,717*	190,439	2.77
Colorado	5,397	11,722	2.2	17,263,342	11,071	1,559*	724,711	4.20
Connecticut	0	0	0	0	0	0	0	0
Delaware	985	2,830	2.9	2,422,332	2,758	877	144,976	5.99
Florida	3,636	9,478	2.6	7,433,413	8,285	897	373,657	5.03
Georgia	20,488	62,819	3.1	49,275,850	60,707	812	2,146,395	4.35
Idaho	2,925	6,188	2.1	5,562,084	6,035	922	348,368	6.27
Illinois	19,140	48,707	2.5	46,458,863	46,540	998	2,578,325	5.55
Indiana	21,861	67,541	3.1	56,849,631	65,179	872	2,963,457	5.21
Iowa	23,481	53,613	2.2	67,952,472	50,472	1,346	3,204,577	4.74
Kansas	9,302	16,236	1.7	13,149,190	15,031	875	799,247	6.08
Kentucky	12,543	40,550	3.2	27,485,929	35,994	764	1,547,160	5.63
Louisiana (a)	5,371	14,640	2.7	9,556,460	13,005	734	570,855	5.97
Maine	383	1,020	2.7	469,306	864	543	35,120	7.49
Maryland	1,686	4,384	2.6	3,389,500	3,607	940	206,356	
Massachusetts	0		0	0	0	0	0	0
Michigan	9,465	29,934	3.2	24,572,846	29,059	846	1,224,338	4,98
Minnesota	26,510	55,640	2.1	62,298,033	52,160	1,194	3,400,341	5.46
Mississippi	13,135	42,223	3.2	40,058,228	42,229	949	1,573,479	3.92
Missouri	16,978	38,778	2.3	47,179,966	36,067	1,308	1,887,606	5.24
Montana	3,022	6,885	2.3	7,984,196	6,674	1,196	430,796	5.40
Nebraska	10,233	17,968	1.7	23,789,848	16,765	1,419	1,015,785	4.27
Nevada	112	425	3.8	1,586,083	421	3,719*	43,568	2.74
New Hampshire	1,373	2,643	1.9	1,218,778	2,462	495	91,249	7.49
New Jersey	410	1,392	3.4	1,376,845	1,290	1,067	67,663	4.91
New Mexico	1,240	2,354	1.9	4,700,264	2,176	2,160*	159,001	3.38
New York	1,390	6,400	4.6	0	6,060	0	0	0
No Carolina	11,516	36,033	3.1	31,005,368	35,049	885	1,309,504	4.23
North Dakota	2,761	5,431	2.0	9,203,259	4,814	1,912	361,399	3.93
Ohio	16,852	51,007	3.0	44,185,092	49,407	894	2,344,316	5.31
Oklahoma	11,256	22,354	2.0	16,905,987	21,377	791	1,077,706	6.38
Oregon	2,312	6,707	2.9	8,551,218	5,720	1,495	306,572	3.58
Pennsylvania	9,163	27,327	3.0	21,498,911	26,307	817	1,216,149	5.66
Rhode Island	0	0	0	0	0	0	0	0
So Carolina	10,077	29,298	2.9	18,478,849	27,720	667	958,066	5.18
South Dakota	2,152	3,715	1.8	3,006,739	3,324	905	193,423	6.43
Tennessee	10,933	67,625	6.2	161,105,133	61,863	2,604	3,078,291	1,91
Texas	37,046	80,527	2.2	63,150,434	77,628	814	3,398,613	5,38
Utah	636	2,099	3.3	1,108,727	1,930	574	79,272	7.16
Vermont	902	2,107	2.3	1,474,405	1,798	820	91,410	6.20
Virginia	8,402	23,474	2.8	21,713,267	22,655	959	1,055,987	4.86
Washington	5,395	11,027	2.0	14,116,365	10,338	1,365	633,383	4.49
West Virginia	430	1,246	2.9	685,355	1,217	563	40,580	5.92
Wisconsin	13,784	32,266	2.3	60,592,560	30,863	1,963	2,105,178	3.47
Wyoming	2,025	4,365	2.2	4,644,446	4,093	1,136	258,096	5.56
Alaska	92	465	5.1	166,365	232	1,716	18,131	10.90
Virgin Islands	51	492	9.6	414,242	398	1,041	28,861	6.97

(a) Excluding one line serving one large industrial customer.

* Irrigation pumping involved.

Thomas Bragg

THOMAS BRAGG, vice-president and director of the Alabama Power Co., and widely known throughout Alabama as a business and civic leader, died on October 30 in Houston, Tex., after an operation for acute appendicitis performed on October 17. He was 62 years of age. Mr. Bragg was married on October 16 to the former Mary Pryor Prowell, Richmond, Tex., and his sudden illness prevented a planned honeymoon trip to Mexico City.

A native of Camden, Ala., and a graduate of Alabama Polytechnic Institute, Mr. Bragg was a professor at Auburn and faculty manager of athletics for many years. In 1920 he became associated with Alabama Power Co. and later became vice-president and director of the company.

At the time of his death he was chairman of the Alabama State Salvage Committee, a director of the Birmingham Chamber of Commerce and of Associated Industries of Alabama.

L. L. Elden

DR. LEONARD L. ELDEN, 75, retired head of the electrical engineering department, Boston Edison Co., and president of the Association of Edison Illuminating Companies in 1918-19, died at the Tobey Hospital, Wareham, Mass., on October 21. He was born in Buxton, Me., and entered the employ of the then Massachusetts Electric Power Co., Boston, in 1885. Three years later, when this organization was absorbed by the Merchants Light & Power Co., Boston, he was placed in charge of electrical station equipment, a position which he soon filled with the newly formed Boston Electric Light Co. When that utility was acquired by the Edison Electric Illuminating Company of Boston Mr. Elden became superintendent of the electrical engineering department and ultimately technical adviser to the general superintendent, the late W. H. Atkins.

Dr. Elden retired in 1932 after 47 years of distinguished service to the utility industry, during which he had been on many committees of the NELA and AIEE, and also a committee member of the International Electrotechnical Commission and American Engineering Standards Committee. His contributions to the electrical field also included the invention of a composite type air circuit breaker, oil circuit breaker and other oil breaker switches. The honorary degree of doctor of science was conferred upon him by Tufts College in 1929.

Samuel H. Taylor

SAMUEL H. TAYLOR, retired secretary of the Pacific Coast Electrical Association, died October 18, in Oakland, Calif. Mr. Taylor had served 56 years in the industry at the time of his retirement from that position on July 1, 1930. In 1884 he was sent to Sacramento, Calif., by the Thomson-Houston Company to set up and demonstrate 25-light series arc street lighting circuits. In 1890 he equipped and supplied the San Jose & Santa Clara Railway, which he later joined. He became associated with Rieger & Atwater, Inc., jobbers of railway supplies, in 1897, and headed its successor, the Electric Railway & Manufacturers Supply Co., until 1920, when it became a part of the Westinghouse company. In 1920 he was appointed secretary of the Pacific Coast Electrical Association. He was one of the oldest members of the San Francisco Electric Club and widely known in California electrical circles.

John G. Learned

JOHN G. LEARNED, vice-president of the Public Service Co. of Northern Illinois, Chicago, died of a heart attack, on October 23, at the age of 64.

Mr. Learned was born in Chicago and was graduated from Chicago Law School in 1902. He began his career in the public utility field in 1898 with the Chicago Telephone Co., now the Illinois Bell Telephone Co. On leaving that company, two years later, he became a salesman for the Commonwealth Edison Co. In 1905, he resigned from the Commonwealth Edison Co. to join the North Shore Electric Co. as general contract agent, where he remained until 1911, when the company became a part of the Public Service Co. of Northern Illinois. At that time he was made general contract agent for the northern and western divisions and the following year was appointed assistant to the vice-president of the company in charge of the commercial, advertising and right-of-way departments. Later he became commercial and new-business manager. It was in 1923 that he assumed the duties of vice-president.

During his association with the Chicago utility Mr. Learned was active in the affairs of the old National Electric Light Association, having served as chairman of the committee on electric service in rural districts, as first chairman of its lighting sales bureau, chairman of the commercial section and as a member of that section's executive committee and chairman of its membership committee. In the course of his career Mr. Learned contributed a number of valuable papers and articles to the commercial literature of the electrical industry.

Code for Pressure Piping

AS A RESULT of the recommendations of the ASA Subcommittee on Scope and Intent of the Sectional Committee on Code for Pressure Piping, B31, two new special subcommittees are being appointed to function under the procedure of Sectional Committee B31. One of these subcommittees will formulate requirements for instrument piping, the other will develop quality factors for castings and working stresses for steel castings, forgings, plate, and bars, all for inclusion in the American Standard Code for Pressure Piping, ASA B31.1-1942.

It has been recognized for some time that present code requirements and standards for instrument piping are not sufficiently complete to provide adequate assurance of the safety of such piping systems. The new subcommittee to handle this assignment will consist of members of Sectional Committee B31 selected from the subcommittees that developed each section of the code representing the several types of piping, together with representatives of interested manufacturers.

The second subcommittee is being formed in accordance with a recommendation made by the recently appointed Joint Conference Committee on Piping Codes and Standards, and endorsed by the Subcommittee on Scope and Intent. This subcommittee's assignment will consist of two parts: (1) the formulation of working stresses for steel castings, forgings, plate, and bars for use in designing special fittings, which are not intended for application, however, to existing standard designs; (2) the development of rules for casting quality factors which will be applicable only to design of special castings.

Both of these subcommittees will be asked to develop their recommendations in the form of rules and tables similar to like data contained in the A.S.M.E. Boiler Construction Code.

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Proceedings—National Accounting Conferences		
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Engineering Committees

ACCIDENT PREVENTION—RESUSCITATION

K-8—Pole Top Resuscitation (9/43)	.10	
(Quantity Prices on Application)		
J-9—1941 Accident Statistics of Electric Light & Power Industry (12/42)	.10	.25
F-10—Tree Trimming Practices (10/38)	.20	.50
E-12—Resuscitation Booklets (7/37) 1— 9 copies	.10 each	
10— 99 "	.08 "	
100—499 "	.06 "	
D-18—Your Unseen Helper (1936) 1,000	$10.	
5,000	30.	
10,000	50.	
C-14—Resuscitation Charts (4/36)	.10	.10
C-12—Twelve Messages on Accident Prevention in the Electric Public Utilities (12/35)	.10	.10

ELECTRICAL EQUIPMENT COMMITTEE

F-13—Reconditioning Flood Damaged Electrical Equipment (12/38)	.30	.75
F-5—Design of Switchhouses for Generating Stations and Transmission Substations (6/38)	.40	1.00
E-1—Rectifier Wave Shape (4/37)	.40	1.00
C-10—Symbols for Metering Diagrams (12/35)	.10	.10
B-10—Electrical Energy Diversion (10/34)	.20	.50

HYDRAULIC POWER COMMITTEE

D-15—Penstocks (12/35)	1.00	2.50
A-19—Hydraulic Governors (8/33)	.20	.50

JOINT REPORTS

K-1—Volume 5 of Engineering Reports Nos. 39 to 49 of Joint Subcommittee on Development and Research (1/43)	5.00	10.00
J-8—Utilization Voltage Standardization Recommendations (10/42)	.20	.50
J-6—Wave Shape of Multi-Phase Rectifiers—Engr. Report No. 49—Joint Subcommittee on Development and Research (8/42)	.50	1.25
J-4—Low Frequency Shielding in Telephone Cables—Engineering Report No. 48—Joint Subcommittee on Development and Research (5/42).	.80	2.00
J-1—Positive Disconnection of Distribution Circuits During Faults to Ground—Engineering Report No. 47—Joint Subcommittee on Development and Research (4/42)	.60	1.50
I-9—Standards for Distribution Transformers (Second Report) EEI-NEMA (12/41)	$0.25	$0.60
I-8—Susceptiveness of Subscriber Station Sets—Engineering Report No. 46—Joint Subcommittee on Development and Research (12/41)	.60	1.50
I-7—Frequency Weighting for Message Circuit Noise — Engineering Report No. 45—Joint Subcommittee on Development and Research (12/41)	.20	.50
H-12—Neutralizing Transformers—Engineering Report No. 44—Joint Subcommittee on Development and Research (7/41)	.30	.75
H-10—Effects of Bonding Exchange Aerial Telephone Cable Sheaths to Multi-Grounded Power Neutrals—Engineering Report No. 43—Joint Subcommittee on Development and Research (6/41)	.30	.75
H-8—Standard Basic Impulse Insulation Levels — AIEE-EEI-NEMA (1/41)	.05	.05
H-3—Inductive Coordination Aspects of Petersen Coil Grounding—Engr. Report No. 42—Joint Subcommittee on Development and Research (12/40)	.25	.65
H-1—Test Specifications for Household Electric Ranges—EEI-NEMA (5/40)	.20	.50
G-9—Methods of Measuring Radio Noise—EEI-NEMA-RMA (2/40)	.20	.50
F-17—Short-Circuiting Relay Protectors—Engr. Report No. 41—Joint Subcommittee on Development and Research (8/38)	.40	1.00
F-8—Test Specifications Automatic Electric Storage Water Heaters—EEI-NEMA (10/38)	.20	.50
F-2—Inductive Coordination of Rural Power and Telephone Systems—Engr. Report No. 40—Joint Subcommittee on Development and Research (1/38)	.80	2.00
E-9—Characteristics of Power System No. 39—Joint Subcommittee on Development and Research (11/37)	.60	1.50
E-5—Principles and Practices for Inductive Coordination, EEI-AAR (1/37)	no charge	no charge
E-4—Joint Use of Poles 6.6 and 13.2 kv. Safety Features—EEI-Bell Tel. (1/37)	.30	.75
E-3—Jointly Used Wood Pole Lines Specifications—EEI-Bell Tel. (1/37)	.50	1.50
Power Level and Sensitivity of Telephone Circuits—Engr. Report No. 38—Joint Subcommittee on Development and Research (1936)	.40	1.00
Computation of Zero-Sequence Impedance of Power Lines and Cables—Engr. Report No. 37—Joint Subcommittee on Development and Research (1936)	.80	2.00
Selected Devices for Reducing Harmonies in Power Systems—Part II—A-C Systems—Engr. Report No. 34—Joint Subcommittee on Development and Research (1936)	.80	2.00
D-14—Vol. IV—Engineering Reports of the Joint Subcommittee on Development and Research (1/37)	5.00	10.00
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H-9—Turbines, Condensers and Associated Equipment (4/41)	.80	2.00
H-7—Boilers — Combustion, 1940 (3/42)	1.60	4.00
G-10—Boilers, Superheaters, Economizers, Air Heaters & Piping, 1939 (4/40)	.80	2.00
G-7—Turbines, Condensers and Pumps (1/40)	.70	1.75
G-3—Combustion, 1939 (12/39)	.80	2.00
F-15—Boilers, Superheaters, Economizers, Air Heaters and Piping, 1938 (12/38)	$1.00	$2.50
F-14—Turbines, Condensers and Pumps, 1938 (12/38)	.70	1.75
F-12—Combustion, 1938 (11/38)	1.00	2.50
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E-15—Oil and Gas Engines, 1936-1937 (10/37)	.40	1.00
E-14—Turbines, Condensers and Pumps, 1937 (9/37)	.60	1.50
E-11—Combustion, 1937 (9/37)	.80	2.00
E-10—Power Station Chemistry, 1937 (9/37)	.30	.75
D-11—Turbines, Condensers, Feedwater Heaters and Pumps, 1936 (11/36)	.60	1.50
D-10—Oil and Gas Engines, 1935-1936 (10/36)	.40	1.00
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K-4—A-C Network Operations, 1938-1940 (4/43)	.60	1.50 1.60
J-5—Ice and Wind Loading Tables for Overhead Line Conductors (Revision of Tables 85 to 96 of the Overhead Systems Reference Book) 1942	1-4 copies 10c.	
I-3—Cable Operation, 1940 (8/42)	.50	1.25
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G-5—Cable Operation, 1938 (1/40)	.60	1.50
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Air Conditioning Installations, 1942 (Summary)	$0.50	$0.50
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Power Sales Manual (1941)	3.50	5.00
Water Heating		
1-5 Standardization of Electric Water Heating Equipment (10/41)	.20	.50
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Utility Appliance Maintenance and Repair Programs	.25	.50
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Commercial Cooking Survey, 1942	$0.25	$0.25
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	15 or more	1.00
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Meals Go Modern Electrically (Special prices in quantity)	.25	.25
Electric Kitchens		
It Can Happen In Your Kitchen	$2.80 per 100	
How to Plan a Modern All-Electric Kitchen	$2.00 per 100	
The Principles of Kitchen Planning	.25	.25
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"It Happened In The Kitchen"—16 mm. full color, talking motion picture. Including complete promotional program	$212 plus excise tax	
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Lighting Booklets		
Better Light—Better Sight—Better Production	$1.50 per 100	
Better Light—Better Sight—Better Living	$1.50 per 100	
Better Light—Better Sight—Better Sales	$1.50 per 100	
Priceless Eyes	4.50 per 100	
Lighting Films		
"Time to Relight"—(Commercial) sound slide 15 minutes, 85 pictures	$10.00 film & disc	
"Light Up—Step Up"—(Industrial) sound slide 15 minutes, 75 pictures	$10.00 " " "	
"You Can Do Something About It"—(Home) sound slide, 15 minutes, 95 pictures	$10.00 " " "	
Wiring		
Rewiring for Commercial and Industrial Buildings	$0.25	$0.25
Handbook of Interior Wiring Design—1937	.50	.50
Basic Factors of Adequate Wiring—1939	.25	.25
Covered Neutral Cable Helps Sell Adequate Home Wiring—1939	.25	.25
Commercial Building Re-wiring Market—1939	.35	.35
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Good Radio Reception (1937)	100 copies	4.00
	1000 "	25.00
	3000 "	60.00
	5000 "	95.00
Objective Type Rates, 1933-1936	.80	2.00
Ice and Wind Loading Tables for Overhead Line Conductors (Revision of Tables 85 to 96 of the Overhead Systems Reference Book) 1942	1-4 copies	10c.
	5-49 "	6c.
Power Sales Manual (1941)	3.50	5.00
Rate Book for 1942	10.00	25.00
Rewiring for Commercial and Industrial Buildings (1941)	.25	.25
Sales Training Manual—Commercial Electric Cooking (1941)	1.50	1.50
Storm Loading and Strength of Wood Pole Lines and a Study of Wind Gusts (1936)	2.00	5.00

Periodicals

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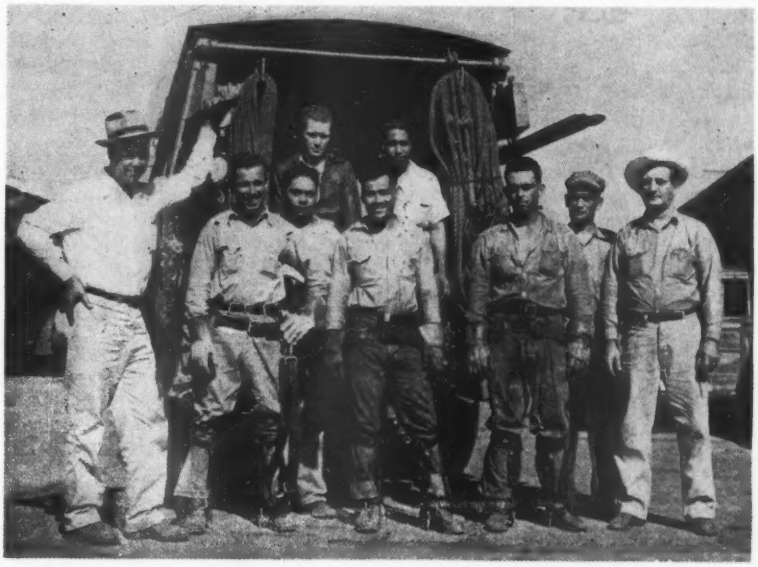
Better Light—Better Sight News (9 issues yearly)	$0.75	$0.75
Edison Electric Institute Bulletin (Monthly)	2.00	2.00
Rural Electrification Bulletin (5 issues yearly)		1.00



Hawaiian Line Crew Winners in Pole Top Resuscitation Contest

Linemen of the Transmission and Distribution Department of the Hawaiian Electric Company have been diligently practicing the pole top resuscitation technique for nearly two years. During the summer an elimination contest was held among the line crews, with William Hanaike's crew, pictured above, emerging as winner of the first prize. Members of the prize winning crew are: Back row, Robert Spencer, Isaac Kanakanui; front row, William Hanaike (foreman), Anthony Baptist, Sam Loy Fook, Clifford Ayau, Charles Pimental, Jr., John Mole and Manuel Perry.

Prizes totaling one hundred and twenty-two dollars were given out as follows: First prize, $50.00; second prize, $25.00; third prize, $15.00; best victim, $5.00, and consolation prize to each of the losing victims, $3.00. The third prize was duplicated because of a tie for this position.

POLE TOP RESUSCITATION INSTRUCTION MANUAL NOW AVAILABLE

Copies of the Pole Top Resuscitation Manual prepared by the Accident Prevention Committee of the Edison Electric Institute are available at the following prices:

Single copies	10¢ each	50-99 copies	7¢ each
10-49 copies	8¢ each	In lots of 100 or more	$6.00 per 100

(Text of this manual was reproduced in the October issue of EEI BULLETIN)

Orders should be addressed to the

EDISON ELECTRIC INSTITUTE
420 Lexington Avenue, New York, 17, New York

PERSONALS

STUART M. CROCKER has been elected president of the Columbia Gas & Electric Corporation. Mr. Crocker succeeds Edward Reynolds, who is retiring to devote full time to his duties as administrative head of the supply division, Office of the Surgeon-General of the Army, which position he has occupied since November, 1942, under leave of absence from the corporation. Mr. Crocker has resigned as vice-president of the General Electric Co. to take over the presidency of the Columbia company.

Mr. Crocker was born at Cambridge, Mass., in 1898, was graduated from Harvard in 1921, and served with Radio Corp. of America until 1922, when he joined the General Electric Co. as assistant to Owen D. Young, chairman of the board. In 1927 Mr. Crocker became vice-president and treasurer of United Electric Securities Co. He was elected vice-president of International General Electric Co. in 1930 and appointed assistant to Charles E. Wilson, then executive vice-president of the parent company in 1938. He was elected vice-president of General Electric in 1940, and since Pearl Harbor he directed the company's electronic production for the armed forces at Syracuse, N. Y.

Mr. Crocker was secretary of the American delegation of the first committee of experts named by the Reparations Commission during the formation of the "Dawes Plan" in 1924, and served in the same capacity with the committee which drafted the "Young Plan" in 1929.

HUGH C. THUERK has been elected president and director of the New Jersey Power & Light Co., with headquarters at Dover, N. J.

Formerly president of the Bradford Electric Co., Bradford, Pa., Mr. Thuerk brings to his new executive position many years' experience in the utility industry. Following graduation from Purdue University, Mr. Thuerk was engaged as merchandise manager of Olean Electric Light & Power Co., Olean, N. Y. Later he became commercial manager of Keystone Power Corp., at Ridgeway, Pa., leaving that position to join the Erie Lighting Co., Erie, Pa. Subsequently he was made manager of operations of that company. While at Erie he was also director of sales for the western region of Pennsylvania Electric Co.

Later he served as a member of the staff of Atlantic Utility Service Corp. at New York City. His affiliation with the Bradford utility followed. Mr. Thuerk has been active in the Edison Electric Institute and is at present chairman of the post-war planning committee of the EEI.

Advancement for five executives of Cincinnati Gas & Electric Co. have been announced by President H. C. Blackwell, following action taken by the CG&E board of directors at its last meeting.

A. C. MOORHAUS, vice-president, retains that position and becomes a member of the board. He joined the Company in 1924 as purchasing agent, was appointed acting general manager in 1930, and was made vice-president in 1938.

GEORGE F. BRENNER, who has been treasurer, is now vice-president and secretary. He came with the Company in 1925 as assistant treasurer.

E. S. FIELDS, manager of the Electric department, in charge of distribution and transmission, has been appointed a vice-president. He started with the Company in 1913 at the power station in Newport.

D. S. BROWN, who has been for a number of years manager of the Electric Production department, has been appointed vice-president in charge of that operation. He became a Systemite in 1916 as boiler room foreman of the Plum Street Power Station.

WILLIAM H. ZIMMER, formerly assistant secretary and assistant treasurer, has been elevated to the position of treasurer, and retains his position as assistant secretary. He joined the Company in 1920 as a messenger boy.

C. A. COLLIER, vice-president in charge of sales and customer service, recently was appointed chairman of the Georgia Power Company's Postwar Planning Committee by P. S. Arkwright, president.

Other members of the Company-wide committee appointed by Mr. Arkwright are C. B. MCMANUS, W. R. POLLARD, J. M. STAFFORD, JR., and L. M. SHADGETT. Mr. McManus is assistant operating manager. Mr. Pollard is manager of the Transportation department. Mr. Stafford is assistant manager of the Advertising department. Mr. Shadgett is Athens division vice-president.

According to Mr. Arkwright's announcement of the appointment of the five men to the Postwar Planning Committee, "they are to suggest a plan and program to prepare the Company to meet the conditions following the war and report such plan and program to the president for approval."

The committee appointment followed by several weeks a preliminary meeting of the Company officers and department heads to discuss the postwar problems and needs of this utility. The committee is small enough to meet frequently and go forward rapidly on postwar plans, and representative enough to assure fair consideration to all phases of the Company's business and responsibilities in any finally recommended program.

BEVERLEY C. FAIRCHILD, Secretary of the Canadian Electrical Association since 1931, has been appointed managing director of that organization. Mr. Fairchild was born at Simcoe, Ontario, March 23, 1899. He was educated at Westward Ho! College, Edmonton, Alberta, and University of Michigan, Ann Arbor, Mich. He was employed on various construction jobs in Ontario after leaving Michigan and by Power Corporation of Canada from 1926 to 1931 as Construction accountant and field office manager. In January, 1931, he was appointed secretary to the Canadian Electrical Association, which position he has held until his appointment on November 3, 1943, as managing director of that organization.

Mr. Fairchild served as a Pilot Officer in the Royal Flying Corps and Royal Air Force in 1917-1919 and in the Canadian Machine Gun Corps (Reserve) from 1921-1928, following which he was placed on the Reserve of officers with the rank of Major, until 1939. He joined 2nd (Reserve) Battalion, Victoria Rifles of Canada in 1940, in which unit he is a company commander with the rank of Captain. Mr. Fairchild is married and has two daughters.

The Detroit Edison Co. has appointed HAROLD COLE as chief planning engineer and HAROLD W. COLLINS as chief assistant superintendent of electrical system.

Following graduation from Cornell University in 1916 with a degree in

mechanical engineering, Mr. Cole joined the Detroit Edison Co. as an engineer in the overhead lines department. In 1928 he became distribution engineer, the position he occupied under his recent appointment.

Mr. Collins was graduated from the University of Michigan in 1918 with a bachelor of science degree in electrical engineering. He entered the employ of the Detroit Edison Co. in 1919 as a test engineer in the engineering division. Then he was made relay engineer and subsequently assistant to superintendent of the electrical system, from which position he was recently promoted to chief assistant superintendent of electrical system.

HOWARD COONLEY, director of the conservation division of the War Production Board, has announced the appointment of DAVIS M. DEBARD as deputy director of the conservation division.

Mr. Debard is a graduate of Cornell University with a degree in mechanical engineering. He has been very active in committee work of the EEI and served as chairman of the General Commercial Committee in 1937-1938.

As vice-president of Stone & Webster Service Corporation, he has taken an active part in the management of a great number of gas and electric companies.

M. C. FUNK of Ashland, Ky., has been named vice-president and general manager of the Appalachian Electric Power company with headquarters in Roanoke, effective December 1.

W. I. WHITEFIELD, of Roanoke, has been named division manager of the company's Roanoke-Lynchburg properties, succeeding J. W. Hancock, who remains as a director, a position he has held several years. Whitefield has been assistant division manager since 1940.

G. L. FURR, of Bluefield, W. Va., has been appointed division manager of the Bluefield division, succeeding Herbert Markle, who will remain with the company in an advisory capacity. These appointments are also effective December 1.

Mr. Funk, a native of Galax, Virginia, has been connected with the Appalachian and predecessor and affiliated companies for 29 years. He began his service as superintendent of construction, later becoming general superintendent and then manager of the Tug River Power company in West Virginia. Subsequently Tug River Power company became a part of the Kentucky & West Virginia Power company. Mr. Funk was then appointed manager of the Kentucky company, and in 1938 was promoted to vice-president and general manager of that company, with headquarters in Ashland, Kentucky.

Mr. Whitefield, who has been with the company for 28 years, began his service as power engineer at Roanoke and was successively assistant superintendent of lighting and power, district manager and assistant division manager. He is a graduate of Virginia Military Institute and is a member of the Board of Visitors of that institution.

Mr. Hancock, a director of the company, began his utility career in Roanoke in 1895. He was for a number of years general manager of both the Roanoke Railway & Electric company and the Lynchburg Traction & Light company, later a part of the Appalachian system. In 1926 when the Appalachian company was formed, he became division manager of the Roanoke-Lynchburg division. He has been a member of the board of directors for several years.

The United Gas Improvement Company has announced that WILLIAM M. HICKEY, President, The United Corporation, has been elected a Director of the Company, to fill a vacancy on the Board.

HENRY R. KRUSE, formerly manager of the northern division of the Puget Sound Power & Light Co. at Bellingham, Wash., has been appointed head of the company's new economic development and research department. L. J. BOURKE, formerly manager of the company's western division, will supplement the home office executive staff in Seattle. JOHN F. WALLIN, formerly assistant manager of the central division, has been selected to succeed Mr. Kruse as manager of the northern division, and J. HARVEY LEACH, the company's advertising director for the past seven years, replaces Mr. Bourke as western division manager.

J. D. HOWARD, commercial and industrial supervisor for the Wisconsin Power & Light Co., Madison, who has been "on loan" to the War Production Board since December 15, 1941, has returned to the company as new-business manager. He succeeds Paul De Leon, who resigned recently to accept a position with Cleaver-Brooks Co., Inc., Milwaukee.

Mr. Howard was graduated from Iowa State College with the class of 1925. Upon graduation he enrolled in the Westinghouse student course in central station sales engineering and remained with the Westinghouse company for nine years. He was stationed in turn at plants in Pittsburgh, Philadelphia, Sharon, in the Chicago district and at the Davenport office. He spent his final year with the company as merchandise supervisor developing dealer outlets.

Mr. Howard joined the Wisconsin Power & Light Co. in 1934 as industrial power engineer in the Sheboygan district. He was subsequently transferred to Madison as commercial and industrial supervisor, the position he held when he entered the WPB service as district manager for 15 Wisconsin counties.

JOHN T. NEAL, JR., manager of the Boonton district of the Jersey Central Power & Light Co., has been appointed manager of the Boonton, Dover, Pompton Lakes area. Under the new set-up Mr. Neal will have supervision over the three offices, with headquarters in Boonton. Mr. Neal has had a wide experience in this area, having served as manager of the Pompton Lakes district from 1929 to 1937, when he moved to Boonton as manager. He has been with Jersey Central since 1925. Mr. Neal attended the University of Pennsylvania and Bliss Electrical School at Washington, D. C.

CHANDLER MURTON, rate engineer in the rural and towns division of the Alabama Power Co. for some years, has taken up rate engineering duties in the Birmingham office of the Commonwealth & Southern Corp.

FLOYD BUCK, supervisor of plant accounting, has been appointed assistant to President W. C. Bell of the United Illuminating Co., New Haven, Conn. He was formerly connected with the Rockland Light & Power Co., Nyack, N. Y. In his new position he will be concerned with the budget, plant protection, statistical studies and analyses. Eugene Rosazza succeeds Mr. Buck in the plant accounting branch. Mr. Rosazza was formerly employed in the State Labor Department, Hartford, joining the United organization in 1939.

C. B. KELLEY has been appointed electrical engineer of power plants of the Kansas City Power & Light Co., Kansas City, Mo., to succeed R. L. Frisby, retired.

Where Do We Go from Here

(*Continued from page* 364)

stable postwar economy will require. To say that the American people can do nothing to correct this situation is tantamount to saying that the people of this country are subservient to Government regardless of the fact that in a true democracy, government is the servant of the people.

While this is neither the time nor place to discuss the blunders of blustering bureaucrats or the piffling plans of prating politicians for a socialized society, it is the time and place to say most emphatically that our boys in the armed services are beginning to wonder if they are sacrificing to defend a form of government in which regimentation, regulations, mounting debt and government controlled business offers nothing beyond a minimum of security. Although the weight of the ordeal through which our fighting men are passing today will leave its mark, they will return to us as young men anxious to take their chances at brushing aside the difficulties which lie in the path of progress so long as the future holds for them an opportunity. Postwar planning by its very nature starts with the premise of a future.

Sam Williams, asked the following questions in an editorial in the October 2 *Electrical World:* "What are we going to tell our young men when they come back home from war looking for opportunities? Are we going to tell them that the electrical industry has more troubles than a dog has fleas? Are we going to tell them what we have been muttering to each other for the past decade, or are we going to tell them something different?"

If industry is not in financial position to maintain the production necessary to support a large volume of imports and exports, then the plans for good relations with our neighbors, for rehabilitation of stricken countries and for strengthening the democratic bulwarks against dictatorship are all likely to come to grief. We have yet to find means of utilizing our vast and abundant resources, and unless business and industry learn how to keep men from the terrible experience of unemployment and from the fear of want which makes them willing to sacrifice freedom and opportunity for a promise of security, we need not complain when we ourselves become dependent upon a dole.

To borrow the words of James H. McGraw, Jr., "We have yet to reconcile the conflicting interests of labor, agriculture, and business so that they can work together effectively. We have yet to learn how to check the fever of inflation and cure the palsy of depression."

I say to you that the only cure for such ills will be through the application of plans following this war which will provide for the continuous existence of a free incentive system for the individual and a free enterprise system for business and industry—a dual system which can and should provide jobs for the unemployed, improve standards of living and working and maintain a national income sufficient to retire in orderly fashion the burden of debt imposed by war.

History records that, the father of our country admonished us with a statement which has been widely heralded since his day—"In times of peace, prepare for war." I take the liberty of reversing that admonition by saying in times of war, prepare for peace. Future historians are likely to say that we Americans stood at the cross-roads and consciously or not made our choice between a system of private enterprise and personal freedom, and a system of collectivism and regimentation. It is particularly appropriate, therefore, as the problems of our time take shape and as events arrange their order and importance, that we appraise the steps we are taking and point the way we are going—that we know the answer to the question posed in the marching tune sung by our fighting men in World War I, "Where do we go from here?"

CONVENTIONS AND MEETINGS

DECEMBER

6-10 National Association of Manufacturers, Waldorf-Astoria Hotel, New York, N. Y.
10 American Standards Association, Annual Meeting, New York, N. Y.
10 Pennsylvania Electric Association, Meter Committee, Benjamin Franklin Hotel, Philadelphia, Pa.

JANUARY, 1944

19-21 American Society of Civil Engineers, Annual Meeting, New York, N. Y.
24-28 American Institute of Electrical Engineers, New York, N. Y.

FEBRUARY

3-4 Sales Executive Conference, Netherland Plaza Hotel, Cincinnati, O.

APRIL

3-5 American Society of Mechanical Engineers, Spring Meeting, Birmingham, Ala.
23-27 National Electrical Manufacturers Association, Chicago, Ill.

MAY

8-11 National Fire Protection Association, Chicago, Ill.

Investment Features

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replaced in their portfolios with public utility revenue bonds, I am very confident that some of my insurance policies will not be quite as good as the day before the exchange was made. Unfortunately I haven't been able to worry much about my own investments and have to depend on my insurance policies as security for my family.

I think this is a very live subject. I think it is one that men with much more experience than I have had, should talk on. I believe it is one all of us should study because if the public power district socialization program goes forward you are not looking at a few isolated instances, but the washing out of the entire power industry, and I think that makes the problem much bigger than if a few municipals and a few utility districts are organized here and there, because the day is coming shortly when some determination has to be made as to how far it is to go.

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